J.B. [illegible]

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Gift of

A
CONNECTED VIEW
OF
THE WHOLE INTERNAL NAVIGATION
OF
THE UNITED STATES,

NATURAL AND ARTIFICIAL; PRESENT AND PROSPECTIVE.

WITH MAPS.

PEABODY MUSEUM OF SALEM

PHILADELPHIA:
H. C. CAREY & I. LEA.—CHESNUT STREET.
1826.

EASTERN DISTRICT OF PENNSYLVANIA, to wit:

(L. S.) BE IT REMEMBERED, That on the fourteenth day of September, in the fifty-first year of the Independence of the United States of America, A. D. 1826, *H. C. Carey & I. Lea*, of the said District, have deposited on this Office the Title of a Book, the right whereof they claim as Proprietors, in the words following, to wit:—

"A Connected View of the whole Internal Navigation of the United States,
"Natural and Artificial; Present and Prospective. With Maps."

In conformity to the Act of the Congress of the United States, intituled, "An Act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned." And also to the Act, entitled, "An Act supplementary to an Act, entitled, 'An Act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies during the times therein mentioned,' and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL, *Clerk of the*
Eastern District of Pennsylvania.

1038.5
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ADVERTISEMENT.

FOR the sake of perspicuity, it may be not improper to state; that this book was composed in the summer of 1825, except various enlargements, at points where new matter has occurred to be spoken of. This has taken place at many of the articles; and the dates appertaining to such enlargements, are generally expressed.

The work is inscribed, and respectfully submitted to the Public; in the hope that it may be found not altogether sterile, in point of interest or utility; and that the public patronage will be accorded, even as it shall be found to have merit in that respect. The author will presume only to say, in the way of recommendation, that much pains have been taken in the composition: and it is incumbent on him here to make his acknowledgments to a respected friend or two, who have eminently assisted him in it. They have contributed, or in the kindest manner made accessible to him, much of that which has gone to constitute what he deems the most interesting portions of its contents.

7/65

INTERNAL NAVIGATION
OF
THE UNITED STATES;
NATURAL AND ARTIFICIAL, IN CONNEXION.

The connexion is designated, on the map of the United States, by means of coloured lines, traced from point to point, where canal improvements exist, or are in contemplation; exhibiting, in consequence, one continuous, uninterrupted inland navigation, from sea to sea;—from the ports of outlet on the Atlantic, to those of the Gulf of Mexico;—with which it equally communicates. Upon the separate State maps, lines are traced to correspond with the general map.

The *red* coloured lines represent those canal works that are already finished, or in considerable progress of execution; the *yellow* coloured lines, those that are projected, whereof some will be immediately gone into, and some at periods not very remote; all which is here attempted to be explained, at the proper heads of the subject.

The letters N, A, M, prefixed, one or other, at each of the articles, signify *Natural*, *Artificial*, or *Mixed*.

The articles of canal-works are numbered consecutively throughout, beginning at New-England, and ending at Florida, from No. 1 to No. 103.

At the end of each division, into which the United States is here reduced and considered, a summary is given of the Navigation, natural, artificial, and mixed, comprised within the same; and at the end of the whole description, is given, a recapitulation, and grand summary, for the whole United States.

NEW-ENGLAND NAVIGATION.

M.—From the mouth of Merrimack river, below Newburyport, up the stream, by a ship passage, twenty miles, to Haverhill, Massachusetts, and thence, by a navigation rendered boatable by canals and other improvements, at sundry rapids and falls, up to the mouth of Baker's river, in Grafton county, New-Hampshire. Distance, *Miles*, 130

No. 1.
MERRIMACK CANALS.

As above.

A.—From Baker's river last mentioned, by canal, across the valley and the sources of Muscomy river, to a point on the Connecticut, at or near Hanover, or Lebanon, on the Muscomy; or otherwise, perhaps, up the valley of Baker's river, and down that of the Oliverian, which discharges into the Connecticut river, at Haverhill. Supposed amount of lockage, 500 feet. Distance, *Miles*, 20

No. 2.

BAKER'S RIVER CANAL.

As above. This, together with some of the articles which follow, are projects now on foot for improving and extending the navigation of New-England, and especially in regard to the Connecticut valley, and the waters of the Connecticut river. A convention of the several states took place in January last, (1825) on the occasion, and committees were chosen, and commissioners have been appointed, to promote the objects, and superintend the works, for the general benefit.

M.—From the foot of Fifteen-mile Falls, in Connecticut river, at Barnet in Vermont, by boat navigation, down to Hartford in Connecticut; rapids and falls in the way having been overcome, many years since, by improvements, to a certain degree. At present, additional improvements are on foot, to render the navigation more perfect. Distance, *Miles*, 220

No. 3.

CONNECTICUT RIVER CANALS.

As above. Improvements along the river, up to this point, have heretofore been made; but the object now is to augment the facilities, and to render the whole of this distance passable for steam-boats of burthen. Surveyors have been appointed, and the business is in progress. Moreover, the general government have undertaken to continue the examination of this river, upward from Barnet to its source in lake Connecticut, on the border of Maine and Lower Canada.

The descent of the river, from Fifteen-mile, or M'Indoe's falls, at Barnet, to Hartford in Connecticut, is 420 feet. This, it is proposed to overcome by dams, and locks, and short canals, at the several places; extending together about twenty miles, and making, consequently, two hundred miles of slack water navigation. Estimate of cost for these improvements, including purchases of the existing locks and canals, 1,439,827 dollars.

* * *

N.—From Hartford, on Connecticut river, down the stream, by a sloop and ship navigation, to the sea, at Saybrook, Long Island Sound; whence, along the Sound, and up to New-Haven, at the head of New-Haven bay. Distance, *Miles*, 85

* * *

A.—From the city and port of New-Haven, by canal, through the state of Connecticut, to the north line thereof, at Southwick in Massachusetts; passing through the town of Farmington; and also from Farmington, up the Farmington river course, to the north line of the town of Colebrook, it being the state line; passing through the town of New-Hartford, Connecticut. Distance, from New-Haven to Southwick 50, from Farmington village to the Colebrook line 25: together, *Miles*, 75

No. 4.

THE FARMINGTON CANAL.

As above. For this canal, an Act of Incorporation was granted by the state of Connecticut, in 1822, authorizing subscriptions to a capital at the discretion of the company; and it being understood that the state of Massachusetts would extend the line of the canal into that commonwealth, to a convenient point of the Connecticut river. The work will now go into execution with a prospect of being completed at an early period, being highly favourably reported upon as to facility of construction, and a plentiful supply of water, with a choice in the line of route: which, from Farmington to New-Haven, will probably be along the Southington and Cheshire valleys. In the distance from Southwick to New-Haven, about fifty miles, there will be required a ten-foot lock for every three miles of canal, or nearly so.

NOTE.

These works are in progress. The excavation of the Farmington Canal commenced in September 1825, and it is supposed the whole canal will be finished in 1827, or 1828. The engineer's estimate of cost, for the line between New-Haven and Southwick ponds, is 420,000 dollars; but the work is partly under contract, at twenty per cent. less than the estimate. Distance, according to survey, 58 miles; lockage, 218 feet. Over the Farmington river, there will be thrown an aqueduct of 280 feet, and in height 34 feet above the river surface. It is proposed, as to the branch canal up the Farmington, to carry it, for the present, only to New-Hartford, a distance of 15 miles; the estimate for which is 101,773 dollars. Width of canal to be 36 feet; depth of water, four feet.

A.—From the ponds at Southwick above-mentioned, by canal, northward, across the river Westfield, to a convenient point of junction with the Connecticut river, above Northampton. Distance, *Miles*, 20

No. 5.

WESTFIELD AND NORTHAMPTON CANAL.

This, as above stated, is a proposed continuation, within the state of Massachusetts, of the Farmington Canal.

NOTE.

The Westfield and Northampton, otherwise called the Hampshire and Hampden Canal, is to be, as already stated, a prolongation, within the state of Massachusetts, of the Farmington Canal. There has been a very recent survey; and the estimated expense of the work, from Southwick to its junction with the Connecticut river, at the Great Bend, about two miles above the village of Northampton, making large allowances, is 290,000 dollars; to which amount of stock, books for subscription are in consequence opened, at the different places most interested in the work. The width of the canal to be, at bottom 20 feet, at the surface of the water 34 feet; the banks to be six feet high; locks, 12 feet in the clear, and 90 feet long. Distance measured at the survey, 29 miles.

The Company associated for the work here specified, and the Farmington Canal Company, purpose applying to their respective Legislatures, for an act of joint incorporation; so as to constitute the whole, in fact, but one canal. And it is to be noted, that the present view is, to extend this important canal upwards to the south line of Vermont state, near to Brattleborough, and thence into that state, along the banks of Connecticut river, as far as the mouth of Wells' river at least. The local facilities for this continuation are said to be not inferior to those afforded for what is already undertaken; and it is made clearly to appear, from facts known and stated, that to and from the port of New-Haven, along this canal, to whatever distance it may be carried, the trade will be very great and lucrative. The copious streams in the route, to be taken into the service, will besides give opportunities of tapping this canal, along many miles of its length, almost at pleasure; so as to afford water power for machinery and manufacturing purposes, to an indefinite extent; perhaps, too, in a few instances, for irrigation.

◆

A.—From a point on the Connecticut river, at or near Windsor, by canal, across the state of Vermont, and touching perhaps near the head waters of Otter river, or by Castleton and Fairhaven, and the Pulteney river, to Lake Champlain, at Whitehall. Distance, *Miles*, 45

No. 6.

CONNECTICUT AND CHAMPLAIN CANAL.

This is one of the suggested works, attended to by the New-England delegation. Examinations are making, for the selection of a route. It is intimately connected with the next following article.

NOTE.

Besides the route above designated for this connexion, there is an important one now to be noticed; which strikes from Burlington, on Lake Champlain, up the valley of Onion river, to Montpelier, and from Montpelier to the Connecticut river, either at the mouth of Wells river, or the mouth of White river.

At a meeting of delegates from the counties of Chittenden, Washington, Orange, and Caledonia, in Vermont, convened at Montpelier, in June last, (1825,) commissioners were appointed to ascertain as to the practicability of this connexion; and they have made a report, which states, as the result of their examinations—viz.

That the canal may commence at the shore of Lake Champlain, and pass up Onion river valley, through Williston and Richmond, to Bolton falls. Distance, 21 miles; rise, at the point of outset, in Burlington village, 220 feet.

From Bolton falls to Montpelier, is 16 miles; ascent, 174 feet.

From Montpelier, through Plainfield and Marshfield, to Onion pond, 21 miles; ascent, 877 feet.

From Onion pond to Connecticut river, at the mouth of Wells river. Distance, 19 miles; descent, 918 feet.

Or, from Montpelier, through Barre and Williamstown, to Cutter's pond summit; ascent, 363 feet. Thence to the Connecticut, at the mouth of White river; descent, 486 feet.

Or, from Montpelier, up the valley of Dog river, through Berlin and Northfield, to a summit in Roxbury: distance, 16 miles; ascent, 484 feet. Thence to the Connecticut, at the mouth of White river; descent, 590 feet.

In consequence of which reconnoissance and report, measures are taken, by the Legislature, for an accurate and complete survey.

As to the other route, there is to be constructed, along so much of it as lies between Rutland and Whitehall, on Lake Champlain, a canal, by a company, who have obtained a charter from the Vermont Legislature for the purpose, and the state of New-York concurring in it. Length, 25 miles. Sutherland falls only to overcome, 75 feet.

◆

M.—From the mouth of Otter river, at Ferrisburg, on Lake Champlain, up the stream, and (at points of improvement) by canal, to the head water of the Otter, in Bromley township. Distance through a mixed navigation, *Miles*, 100

No. 7.

THE OTTER AND CASTLETON CANAL.

For this projected work, an Act of Incorporation has been applied for to the Vermont Legislature. The Otter river, or creek so called, furnishes, in general, excellent navigation between the falls, which are at Vergennes, Middlebury, Pittsford, and Rutland. At Rutland, or thereabout, the canal from Connecticut river, last above inserted, intersects the Otter river, as it proceeds to Castleton and Whitehall.

◆

A.—From the head of Otter river in Bromley township, as inserted in the last article, by canal in continuation, to the upper water, and along the valley of the Battenkill to the New-York line, and thence to the Hudson river or the Champlain Canal, in Washington county, New-York, opposite Saratoga. Distance, 40 miles—deduct so much of it, lying within New-York state, as noticed at No. 34 of the New-York series, 20 miles. *Miles*, 20

No. 8.

THE OTTER AND BATTENKILL CANAL.

This is a continuation of the above line, and is referred to in the New-York series of canals.

A.—From Boston harbour, by canal, across Massachusetts, to strike upon Connecticut river; suppose at or near Northampton or Springfield. Distance, *Miles*, 90

No. 9.

BOSTON AND CONNECTICUT, OR CHICKAPEE CANAL.

This also is a work proposed, and especially the object of a resolution of the Massachusetts Legislature, at their last session, authorizing the appointment of commissioners, "to ascertain as to the practicability of making a canal from Boston harbour to Connecticut river, and to cause such surveys as they may deem necessary, to determine on the most convenient and advantageous route for the same."

An Act of Incorporation for a similar undertaking, was passed in the year 1792, in favour of the late general Henry Knox and associates; but, in those days, capital was wanting, and the period limited by the charter was suffered to expire, without the work having been commenced.

NOTE.

Since the above article was written, surveys of the ground have been made; and the engineer, appointed by the governor of Massachusetts to co-operate with the commissioners, having been engaged in this service during the summer and autumn, has just made an elaborate report, (9th Jan. 1826.)

By which it appears, that, as it is desired that this, and the canal in continuation, from Connecticut river to the Hudson, shall come into close connexion with the Erie and Champlain Canals of New-York; and it having been ascertained, by reconnoissances, made by the Massachusetts commissioners, that the best route from the Connecticut to the Hudson, is up the valley of the Deerfield river, and down that of the Hoosack, it is in consequence requisite to take a more northerly course for this canal between Boston and the Connecticut, than the route by the Chickapee to Springfield. It may furthermore be requisite to take such northerly route, on account of certain water privileges already granted to the Blackstone Canal Company; as Worcester Long Pond, the Blackstone, and all its tributary streams, which perhaps may be essential to the success of that undertaking. For these reasons, it has seemed expedient and proper to abandon the southern route; and a complete survey has been made of one, to terminate at the mouth of Miller's river on the Connecticut, and whereof Mud Pond, in Ashburnham, forms the summit level, at 1066 feet above low water mark in Boston harbour, and 893 feet above the Connecticut, at the mouth of Miller's river.

From this summit, the route westward passes Pierce's mill-pond, Whitney's mill at the village in Winchendon, Hyde's bridge, Dennis' pond at New Boston village in Winchendon, and thence, along by the course of Miller's river, to its mouth below Durkee's mill-dam.

From the summit of Mud Pond, eastward, the route is by the valley of the Brook-stream to Gross's mill-dam, to Whitman and Farwell's mills, and along the left bank of the Nashua river to the road in Fitchburg; thence by the valley of Pearlhill brook and Wilder's ridge, and the ponds of Lunenburg, across to the Nashua again at Staple's mills; thence through Shirley, Groton, Littleton, Boxborough, and across Fort Pond brook, to Elizabeth river at Sherman's mill-pond; thence to Concord river above Lee's bridge, and over the Highland which divides the waters of the Concord and the Charles, down to Waltham Plain, at a point near the School-house: from thence, to an eligible point of the harbour, hereafter to be selected. It is suggested, that the point of termination may be in a capacious basin, east of Washington street, where an easy communication can be had between sea vessels and canal boats, merely by forming an enclosure with lock-gates, for the admission of ships and other vessels to the surface of the water of the basin. The plan will probably be subservient also to the supplying the town of Boston with fresh water.

Distance, by the line of this survey.

Western section, from summit, - - - - -	38
Eastern do. do. - - - - - -	62
	Miles, 100

Fall, eastward and westward, 1959 feet.

The canal is to be 40 to 43 feet wide at the water-surface, 28 feet at the bottom, five feet deep; and it is proposed that the locks shall correspond, in dimensions, to those of the Erie Canal of New-York; say 90 feet long, by about 14 feet in width.

As to a supply of water, there is, considering the elevation of the summit, the means of an uncommon abundance at hand: independent of a number of great ponds, which may, any or all of them, be converted into reservoirs, and turned into the canal, as occasion is found to require, at very little expense, the sources of supply, found in the line of route, are not inconsiderable. The reservoir ponds alluded to, are in Ashburnham, Gardner, and Westminster, as follows:

Upper Naukeag pond,	286 acres,	20 feet deep; giving,	249,163,200
Lower Naukeag pond,	208 acres,	10 feet deep,	90,604,800
East pond,	66 acres,	10 feet deep,	28,749,600
Wattatick pond,	27 acres,	10 feet deep,	11,761,200
Gardner pond,	139 acres,	20 feet deep,	121,196,800
Westminster pond,	152 acres,	20 feet deep,	132,422,400
	878 acres.	Cubic feet,	633,898,000

So that there cannot be a doubt of an abundant supply of water forthcoming for the contemplated canal over the Mud Pond level, answerable to the most extensive trade, at all seasons of the year, save the season of ice. Even the reservoirs alone, should it be necessary to resort to them, cannot but be sufficient, without using the natural streams passed on the line, in case such a thing is desirable.

The engineer's estimate of expense is, for the present, merely a rough one, because it is thought needful, at the next season, to re-examine parts of the route, in order to ascertain the means of avoiding certain difficult places, if possible, and how to overcome some other difficulties that are not to be avoided; also, it is proposed to make some lateral surveys, which time did not admit of at the past season; in consequence whereof, it may be presumed there may be deviations, more or less, from the general line marked out, that may affect materially the details of calculation. The estimate given in, applies to what is already known as feasible at least, and stands thus:

For lands, water-rights, &c. - - -	$ 20,000
For lockage, 1959 feet, at $ 800 per foot, -	1,567,200
For trunk of canal, including culverts, bridges, defence-walls, &c. 100 miles, at $ 8000 per mile, - - - - - -	800,000
For aqueducts, deep cutting, &c. - -	300,000
For reservoirs, - - - - -	20,000
For superintendence, and contingencies, -	292,800
	$ 3,000,000

A.—From Northampton, or Springfield, on Connecticut river, by canal, continuing across Massachusetts to the New-York line, and thence into New-York state to the Hudson river, at or near the town of Hudson.
Distance, *Miles*, 60

No. 10.

CONNECTICUT AND HUDSON CANAL.

This may be regarded as a continuation of the project last above inserted; but its full execution is necessarily dependent on the concurrence of the state of New-York.

NOTE.

This, as already observed, is to be as a prolongation of the line, from the point where the canal of the preceding article terminates, on the Connecticut; so as to form one direct line from Boston harbour to the Hudson, and there to come into immediate connexion with the Erie Canal of New-York.

Time did not allow of a minute survey of this canal route, or this section of the whole line being gone into by the engineer, during the past season; but the Massachusetts commissioners, in virtue of their preliminary examinations, have ascertained the fact of the practicability of constructing an eligible canal along the Deerfield and Hoosack river valleys.

The narrows and falls in the Connecticut, below Miller's river, it is proposed to pass by means of a dam, and a short canal along the left bank of the Connecticut, and across the bend, so as to debouche opposite to the mouth of the Deerfield. From that point, the route is, up the Deerfield valley, to a summit-level, lying between the western branch thereof and the north branch of the Hoosack river, in Reedsborough; or, to a tunnel, as a summit-level, extending between the Deerfield Great Bend, and the Hoosack in Adams, through the base of Hoosack mountain; a length of four miles: which tunnel, if adopted, to be 20 feet wide, and 13½ feet high.

After passing the Hoosack mountain, no formidable difficulty is discovered to exist, in the way to the Connecticut. The route is down the valley of the Hoosack, as far as the falls in Pownal, and thence, either to continue down, on the right of the river, and strike for the Lake Champlain Canal at Stillwater, one mile north of the mouth of Hoosack, and 16 miles distant from the Erie Canal; or else, to take the left bank of the river Hoosack, from Pownal, to a point south of the Four Corners, and thence strike direct for the city of Troy, on the Hudson.

The following is given in by the engineer, as an "approximation" to an estimate of expense; to serve in some measure for a guide, until a full and minute survey of this canal route shall take place; which, it is understood, will be in the season that is coming.

Length of canal, 78 miles, at $10,000 per mile,	$780,000
Hoosack mountain tunnel, 4 miles in length, at $230,208 per mile, - - - -	920,832
Lockage east of Hoosack mountain, $611\frac{34}{100}$ feet, at $1,000 per foot, - - - -	611,340
Lockage west of Hoosack mountain, 711 feet, at $1000 per foot, - - - -	711,000
	$ 3,023,172

A.—From Chelmsford, Massachusetts, on the river Merrimack, above Pawtucket falls, by canal, to Boston harbour. Distance, *Miles*, $29\frac{3}{4}$

No. 11.

THE MIDDLESEX CANAL.

A charter of incorporation for this undertaking was obtained from the Massachusetts Legislature in 1789, but little was done in it by the company, till the year 1793; when Mr. Weston, an experienced engineer from England, was invited to run levels, and survey the ground. He did so; and confirmed, by his report, the favourable opinions already entertained. From that time, the work was carried on with an industry commensurate with its importance, through many striking difficulties attendant on its execution at the early period in question; and, in 1804, though not then fully complete, it was laid open for public use. Various additions were afterwards made, and there have necessarily been, from year to year, many repairs and renovations, besides a number of incidental constructions, as buildings, wharves, &c. to accommodate the trade; and purchases of some lands: the cost of all which together, amounts to about seven hundred thousand dollars. This canal is generally thirty feet wide at the water surface, and twenty feet at the bottom; depth of water three feet; height of the banks four feet. From the summit level at Concord river, there is a current down the canal of about a half mile per hour, in consequence of a descent or fall of one inch per mile. The boats of transportation, which carry fourteen tons, are drawn by single horses, at the rate of three miles per hour; and the expense of transporting a ton, the whole length of the canal, is three dollars and fifty cents, whereof one dollar and seventy cents is toll, and one dollar and eighty cents freight. Packet boats pass the whole length downwards in five hours; upwards in seven hours. The grant to the Middlesex Canal Company, is a perpetuity.

NOTE.

This canal falls short of the distance specified as above. The Concord, or Sudbury river, which affords a full supply of water in both directions, crosses the line of it at the summit level; and from thence, by the most recent and accurate measurement, it is twenty-two miles to Charlestown, and five miles to the point of junction with the Merrimack river; together twenty-seven. From tide-water, at Charlestown, to the summit, the ascent is one hundred and four feet, and thence to the Merrimack, the descent thirty-two feet; which is overcome by twenty locks of various lifts; and these are seventy-five feet long in the clear, ten feet wide at the bottom, and eleven feet at the top. The number of aqueducts, over rivers and streams, are seven; and there are fifty bridges across the canal, having stone abutments, twenty feet apart. As to aggregate cost, it stands at 528,000 dollars; that is to say, this is the amount of assessments on the proprietors; what has been, over and above, expended, was derived from income, appropriated at different times to the object.

During the last war, the timber used in repairing the Constitution frigate, and since then, the timber for building the Independence 74, (live oak excepted,) was all brought down this canal to Boston; and through the same channel, most of the masts, spars, &c. used there, in repairing and fitting our vessels of war, have been supplied. Without the Middlesex canal, this part of the country could not have furnished these articles for the occasion; but now, there is no part of the United States, where the best white oak timber, for naval purposes, can be so easily, and so abundantly supplied, as from the central parts of New Hampshire, through the Merrimack river and Middlesex canal. The resources of this quarter, in white oak timber, pine spars, and lumber of various kinds, are inexhaustible for ages to come, or will undoubtedly be rendered so, when the Winnepiseogee country, and the Connecticut river upper valley, come both to be united, by means of canals, with the Merrimack, as is soon to be the case.

Notwithstanding all this however, and much more that might be said, touching the immense importance of the Middlesex canal, the time has not yet arrived, for the enterprising projectors and proprietors to receive any remuneration, in profit arising from the tolls thereof, or even to have the interest of their expenditure made thereby good to them. This is apparent, from the average annual income of the three years last past, not having amounted to quite 30,000 dollars. For 1825, it was only 27,930 dollars. Whereas the calculation is, that about 40,000 dollars income is requisite to yield a dividend of six per cent., after paying the expenses of management, and ordinary or average annual repairs. It is true, the corporation is possessed of mills erected at Charlestown, and others at Billerica, on Concord river, as also other real estate of value; which may contribute to render the concern lucrative.

Moreover, the proprietors are the principal owners of the canals round the several falls of Merrimack river; which at the present time is a far more productive property, in proportion to the capital invested, than the Middlesex; the tolls from these canals yielding a large interest upon the cost of them.

Between Concord, New Hampshire, and the entrance of the Middlesex canal at Chelmsford, the improvements in question, on the river Merrimack, long since effected, are as follows:

At Bow, four miles below Concord, a fall of twenty-five feet in one-third of a mile; overcome by a durable canal with four locks, and a dam across the river, at the expense of 19,000 dollars.

Seven miles below this, are the Hooksett falls of sixteen feet, running fifty rods; overcome by a canal with three locks. Expense 13,000 dollars.

Eight miles farther down, are the Amoskeag falls; overcome by a canal one mile in length, with nine locks, and several extensive dams, at an expense of about 60,000 dollars.

Immediately below, commences the "Union Canal," extending nine miles, and comprehending six sets of rapids or falls. These works have cost about 35,000 dollars; and for this distance of nine miles, a toll is authorized at the rate of seven and a half cents per ton, per mile.

Finally, Wicasee falls, four miles above the entrance of the Middlesex canal. These have been locked, at an expense, including some incidentals, of about 12,000 dollars.

But, what is here perhaps most in point, is the very great accession of prosperity, which the Middlesex canal cannot fail to experience, when the great line of New England connected navigation, at present under contemplation, as herein described, shall in a measure be realized.

A.—From Boston harbour, by a proposed canal, across a portion of Massachusetts, either directly towards Rhode Island; or else, across from Cape Cod bay to the head of Buzzard's bay, where the isthmus of Cape Cod is both low and narrow; or otherwise, from Barnstable harbour to Hyannus harbour. A canal across this isthmus has long been meditated, and some years ago a company was organized to carry it into execution, adapted to vessels drawing ten feet. The other of these routes is the one correspondent to a well-known report of Mr. Secretary Gallatin on the subject, in 1808, and goes to Taunton on Taunton river. Distance, *Miles*, 26

No. 12.

MASSACHUSETTS AND RHODE ISLAND CANAL.

Both the routes here specified have been viewed by a board of engineers of the United States, conjointly with the state commissioners, and by the former reported on, not unfavourably, to the Secretary of War, under date 3d February, 1825. It is likely that a canal by each route will be effected: nevertheless, in regard to the Cape Cod bay, or the Barnstable project, there are serious obstacles in the way of success, from shoals.

The supposed expense of the Narraganset project, from Weymouth to Taunton, is 1,250,000 dollars.

* * *

N.—From Taunton, down Taunton river, to Mount Hope bay, down which, and up to Providence harbour, Rhode Island. Distance, *Miles*, 50

* * *

A.—From Providence harbour, Rhode Island, by canal, along the Pawtucket, otherwise the Blackstone river valley, to Worcester in Massachusetts. Distance, *Miles*, 40

No. 13.

BLACKSTONE CANAL.

Regular surveys for this work have been made, and preparations for its execution have commenced. The estimate amounts to 600,000 dollars, for which the stock of the company is about to receive an overflowing subscription.

In early times, the idea of opening a canal communication between Providence and the important town of Worcester, was formed, as of a thing that would very likely, in process of time, be done. It will now be realized, with an immense accumulation of collateral advantages.

Since the above was written, contracts have been made for excavating and embanking; and the work is now (1826) in active progress. It is expected the whole canal will be complete, and laid open for navigation, next year.

* * *

N.—From Providence harbour down to Narraganset bay, and thence through Long Island Sound to the harbour of New-York. Distance, *Miles*, 220

SUMMARY FOR NEW-ENGLAND.

Natural Navigation, - - - - - -	355
Artificial Navigation, - - - - - -	426
Mixed Navigation, - - - - - -	450

To which, add as follows:

Tributaries of the Connecticut river; viz.

In Massachusetts; the Deerfield, the Agawam, the Chickapee, the Millers, - - - - - - -

In Connecticut; the Windsor, the Scantic, - -

In Vermont; the West, the Saxons, the Williams, the Black, the White, the Waterquechy, the Umpomponosack, the Waits, the Wells, the Pasumpsic, the Nulhegan, - - - - - - - -

In New-Hampshire; the Upper Ammonosack, the Lower Ammonosack, the Israels, the Johns, the Muscomy, the Sugar, the Cold, the Ashwelot, - - -

Tributaries of the Merrimack river; viz.

In Massachusetts; the Concord, the Beaver, the Shawsheen, the Spicket, the Powow, - - - - -

In New-Hampshire; the Bakers, the Blackwater, the Contocook, the Souhegan, the Bowcook, the Cohas, the Suncook, the Piscataquog, - - - - - -

Charles river; rises in Middlesex county, Massachusetts, and falls into Boston harbour, - - - -

Mystic river; discharging on the north side of Boston harbour: it is connected with the Merrimack, by the Middlesex canal, - - - - - -

Ipswich river; rising in Middlesex county, and falling into the sea, below Ipswich, - - - -

Neponsit river; rising in Norfolk county, and falling into Massachusetts bay, - - - - - -

North river; from Plymouth county, falling into Massachusetts bay, - - - - - - -

Taunton river; from several sources, falling into Mount Hope and Narraganset bays, - - - -

The Housatonick; rising in the valley of Berkshire, Massachusetts, and falling into Long Island Sound, at Stratford, Connecticut, - - - - -

IN THE STATE OF MAINE; VIZ.

Saco river; rises in the White Mountains, New-Hampshire, and enters the state at Fisher's; whence, after a general south-east course of 70 miles, it falls into the sea, near Biddeford. Near its mouth are considerable rapids, - - - - - - - -

The Androscoggin river; rises in Lake Umbagog, whence it enters New-Hampshire, and re-enters Maine; and after a winding course of 150 miles, joins the Kennebeck, 18 miles from its mouth: navigation much obstructed by falls, - - - - - - -

Kennebeck river; has the source of its principal branch in Moose Head lake, and thence a general south course of 156 miles to the sea, below Bath. It is navigable up to the Taconic falls, Waterville, 68 miles from its mouth,

Penobscot river; rises by two considerable branches, in the Highlands, both passing through a number of lakes: after their junction, 65 miles above Bangor, it flows, in a general course, west of south, to Penobscot bay. Large vessels ascend to Bangor, which is 50 miles from the Owl's Head at the entrance of the bay, -

St. Croix river, or Passamaquoddy; which is the boundary, in part, between the United States and New Brunswick; falls into the bay of Passamaquoddy, -

The St. John's river; rises in the west of the state, and running eastward through several lakes, enters New-Brunswick, and falls into the bay of Fundy, -

The bay, the sound, and the lower river-navigation along the coast of this state; it is most extensive and commodious; and above the same, there are numerous navigable streams which intersect the settled part of the country: lakes and ponds abound throughout, -

IN THE STATE OF NEW-HAMPSHIRE; VIZ.

Salmon-Fall river, or Piscataqua; has many tributaries. From its source to its mouth, below Portsmouth, it is the boundary between New-Hampshire and Maine,

Besides the Piscataqua, the Connecticut, the Merrimack, the Saco, Androscoggin, and Upper and Lower Ammonosack, there are numerous streams contributing to water the state, in part navigable, and many lakes,

IN THE STATE OF VERMONT; VIZ.

Lake Champlain; navigable in all its length, from Whitehall, its south extremity, to the Canada boundary, lat. 45°, - - - - - - - -

The Missisque, La Moelle, Otter, the Onion, and other streams, rise in the Green Mountains, and fall into Lake Champlain; the Otter at 20 miles south of Burlington, after a course northward of 90 miles: it has, between its falls, a bold navigation, - - - -

IN THE STATE OF CONNECTICUT; VIZ.

The Thames; formed of the Shetucket and Yantic rivers, uniting at Norwich; falls into Long Island sound at New-London. Vessels of burthen ascend to Norwich,

The Housatonick river; as well as the Connecticut, traverses the state from north to south, and branches into many short streams, - - - - - -

IN THE STATE OF RHODE ISLAND; VIZ.

Providence river; formed of the Wanasquiatucket and Moshasuck streams, which unite above the town of Providence, 35 miles from the ocean, - - -

Patuxet river; rises by two branches in the west of the state, and discharges into the Providence, 5 miles below the town, - - - - - - -

Pawcatuck river; waters the south-west part of the state, and falls into Stonington harbour, Connecticut,

Miles, 1231

Unascertained, *Miles*, ...

NOTE.

A complete examination of the upper part of Connecticut river, from Barnet in Vermont; the point at which the New England surveyors left off; up to Lake Connecticut, and the Highlands, bordering on New-Hampshire, the state of Maine, and Lower Canada, is making at present, under the superintendence of Mr. Dewitt Clinton, jun. appointed by the United States for the purpose; as likewise of the waters lying between the Connecticut and Lake Memphramagog; and a report to government on the subject, will doubtless be made soon, and published.

These surveys, it is not a little probable, will finally result in establishing a navigation between the Connecticut and the St. Lawrence rivers,—

No. 14.

THE CONNECTICUT AND ST. LAWRENCE CANAL;—

by way, on one side of the dividing ridge, of the Clyde, Lake Memphramagog, and the St. Francis river; and on the other side of the dividing land in Vermont, by the Pasumpsic river, or by the Nulhegan, which flows into the Connecticut about 40 miles above Barnet; or by both these routes, if the Connecticut itself should be improved so far up as the Nulhegan, which probably it will be.

The survey referred to, has been completed. The route from Lake Memphramagog to the Connecticut river, by the Nulhegan valley, presents, it is said, fewer obstructions for a canal, than that of the Pasumpsic. The principal feeder is Knowlton lake, in the town of Random; summit level 495 feet above Lake Memphramagog, 296 feet above the Connecticut at the mouth of Nulhegan river; together 791 feet of lockage.

By the Barton river route, to the Pasumpsic valley, and down to the Connecticut river; the feeder, on this line, is Willoughby lake, in the town of Westmore. Summit 523 feet above Lake Memphramagog, 755 above the mouth of the Pasumpsic river; together 1278 feet.

By the Black river valley, and across to Joe's brook, passing through Danville, to the Pasumpsic and the Connecticut. Summit, on this route, too elevated to be eligible.

Whenever the Memphramagog and Connecticut communication is perfected, it will be, not merely as a link in the proposed chain of inland navigation between the Connecticut river and the St. Lawrence, but it will form also an important member of a connexion between Boston harbour and the river St. Lawrence. The particular works along the line, by which the same will have place, may be enumerated, as follows:

1. The Middlesex Canal in Massachusetts.
2. The canals round the falls in Merrimack river.
3. The Merrimack and Connecticut Canal, by the valleys of Baker's and Oliverian rivers.
4. The Connecticut and Memphramagog Canal.
5. A few short canals, and locks, needful to overcome the rapids between Lake Memphramagog and the river St. Lawrence.

Further, the New-England Committee have a survey now in forwardness, for a canal, called the Winnepiseogee canal. It is to connect the tide-water of the Piscataqua with the Upper Merrimack river, through the Lake Winnepiseogee, in New-Hampshire;—

No. 15.

THE WINNEPISEOGEE CANAL,

which it is understood will form a level, and supply the canal with water abundantly; on one side down to tide at Dover, and on the other side, to the Pemigewasset or Upper Merrimack river, near or at New-Chester: or perhaps, the route west of Winnepiseogee lake, will be through Squam lake, to the Pemigewasset or Upper Merrimack, at Holderness, below Plymouth Court-house. This section is not yet surveyed, but along the other, or principal one, a regular survey has been completed, and a company, originally instituted in 1811, have had their charter renewed for the undertaking. Capital stock, 600,000 dollars.

The distance, according to survey, from tide-water of the Piscataqua below Dover, to the mouth of Merrymeeting river, at the south extremity of Lake Winnepiseogee, is 28 miles: the waters of the lake are 501 feet above tide level, to be regulated by lockage; and it is proposed for the canal to be 30 feet wide, 4 feet deep; the locks 82 feet long, and of stone. The engineer's estimate of cost is 590,982 dollars; and he supposes that about 74,000 dollars in addition, will be required to continue the canal from Lake Winnepiseogee to the Upper Merrimack river, at Holderness.

This also will prove a link of some consequence in the New-England chain, and another link, it is possible, may be added, that will reach from the Winnepiseogee, in New-Hampshire, into the state of Maine, and comprise within it, portions of the rivers Saco, Androscoggin, Kennebeck, and Penobscot;—

No. 16.

THE KENNEBECK AND PENOBSCOT CANAL;—

with their respective sea-ports of entry.

Moreover, application is made to Congress, by the state of Maine, relative to an improvement of the navigation of the Kennebeck river, and connecting it with the river St. Lawrence, through the Chaudiere of Lower Canada, which discharges into the St. Lawrence, above Quebec. The Megantic and other lakes, situate in the Highlands, on the division line between the United States and Canada, or the summit level where the Kennebeck and Chaudiere rivers approach, point out this union as being feasible, and, whenever the Canadian government shall concur in the project, not of difficult execution. The communication would be short and direct, from Quebec to the Atlantic, through the central parts of the state of Maine.

From Waterville on the main Kennebeck, 18 miles above Augusta, to the confluence of the West and North branches, the distance is 70 miles; and thence, by the West branch, or Dead river, to the Chaudiere, is about 50 miles in addition.

It was by this route, that general Arnold, in the Revolution war, penetrated to Quebec.

NEW-YORK NAVIGATION.

N.—From New-York harbour, by the Hudson river, which is navigable to Albany for steam and sail boats, and by some improvement, particularly at the Overslaugh near Albany, may be rendered so for larger vessels up to Albany. Distance, *Miles*, 145

A.—From Albany, by canal, (save in part where the Hudson stream is availed of, south of Fort Fdward) to Lake Champlain, at Whitehall. Distance, from Waterford, or from the point of union with the Erie canal, south of the Mohawk river, *Miles*, 62

No. 17.

THE NEW-YORK CHAMPLAIN CANAL.

For this, and the grand Erie canal next below inserted, together with subsidiary works, the state of New-York has incurred a debt, amounting, down to the 31st December 1824, to 7,467,770 dollars: whereof the interest, by the terms of contract, partly at six, and partly at five per cent., is 402,823 dollars per annum.

The revenue, from tolls, exclusive of other income, for the twelve months ending 31st December 1824, has exceeded 310,000 dollars, and it is expected, that in a year or two after all shall be finished and complete, the amount of tolls will be doubled, perhaps tripled.

N.—From Whitehall, through Lake Champlain, to the United States boundary line, north of the town of Champlain, lat. 45°. Whence, the river Sorel, or Richelieu, in Upper Canada, conducts to the St. Lawrence. Distance, *Miles*, 120

A.—From Albany, by canal, westward, passing Schenectady, Little Falls of Mohawk, Utica, Rome, Jordan, Montezuma, Lyons, Palmyra, Pittsfield, Rochester, Lockport, Blackrock, to Buffalo, on Lake Erie. Its junction with the Champlain canal, is formed south of the Mohawk river, the latter canal passing the town of Waterford on the north bank, and crossing the Mohawk. The distance, from Albany to Buffalo, *Miles*, 363

No. 18.

THE ERIE AND HUDSON CANAL.

Of this, not much now remains to be done; a few miles only: and its full completion is expected with confidence, before the expiration of next year, 1826. There will be, in all the distance, 81 locks, embracing of fall and rise together 688 feet, in three sections, thus:

West.	Buffalo to Montezuma,	158
Middle.	Montezuma to Utica,	96
East.	Utica to Albany,	109
	Miles,	363

West.	21	locks.	Descending		190
Middle.	7	do.	Ascending	62	79
	2	do.	Descending	17	
East.	51	do.	Descending		419
	81			*Feet*,	688

Giving, consequently, 564 feet for the level of Lake Erie above the Hudson at Albany. From Syracuse to a little east of Utica, this canal has a summit water level of 67 miles; along which distance not a single lock therefore, nor any interruption. It is 40 feet wide at the surface, 28 feet at the bottom; depth of water four feet; and boats of 40 to 100 tons, laden with commodities, travel through its finished sections at the rate of 55 miles in 24 hours; boats with passengers at the rate of 100 miles in the same time. The locks are 90 feet long in the clear, and are of 15 feet width, a circumstance, which appears now to be regretted by some of our engineers, who think that had they been built of half that width or a little more, say eight feet or eight and a half feet, there would have been great advantage in it; but this is a controverted point.

A substantial and commodious harbour and basin have been constructing at Blackrock on the Niagara river, with a view to this canal having its termination there; that is to say, for it to enter that basin, and to receive its western supply of water therefrom; an additional canal from thence, passing on to Buffalo; but by an Act of the legislature, 20th April 1825, it is now made the duty of the canal commissioners, to continue and complete the Erie canal, to Lake Erie at the mouth of Buffalo creek, *distinct from, and independent of the basin at Blackrock*, if in the opinion of the commissioners this plan will secure a more certain and permanent supply of water for the western part of the canal, or if, for any other reasons, they think it more for the public advantage, than the Blackrock plan.

By the same Act of the legislature, the canal commissioners are authorized also, to cause such alteration and improvements in the "Champlain Canal," between Fort Edward on the Hudson and the dam at Saratoga falls, as they may deem necessary, to form a complete canal navigation from Fort Edward down to Fort Miller, eight miles, and thence to Saratoga falls two and a half miles farther; along which intermediate space of ten and a half miles, the channel of the river has hitherto been used: and for the expense of this alteration, the sum of 170,000 dollars is appropriated.

For the double purpose of insuring an abundant supply of water on the summit level of the Champlain canal, and of opening the navigation to a still higher point on the Hudson, the plan has been adopted of a navigable feeder, leading from the river at two miles above Glen's falls, through Glen's village and Sandy-Hill, seven miles, to the Champlain canal, entering it at two miles above the village of Fort Edward; and the work is commenced.

NOTES.

A.

According to the eighth annual report of the commissioners, the New-York *canal fund*, on the first of January, 1825, consisted of the following items.

The canals, estimated at cost, deducting the amount of tolls received therefrom, - - - -	$8,829,056
Lands given by the Holland Land Company, in the county of Cattaraugus, 100,632 acres; valued at - - - - - - - -	35,221
Lands given by John Hornby, in Steuben county, 3,000 acres, valued at - - - - -	3,000
Lands given by G. Granger, in Steuben county, 1,000 acres, valued at - - - - -	5,000
Grand Island, in Niagara river, 17,381 acres, -	48,423
Onondaga salt springs reservation, 540 shares, -	27,000
Bonds in hand for lands sold, of the canal fund, -	58,646
Amount of canal fund, - - - - -	$9,006,346

B.

The canal debt and revenue.

The receipts into the canal fund treasury, during the year 1824, were,

In revenue and loans, together, - - - -	$2,243,497
The disbursements in 1824, - - - -	1,984,140
Leaving, consequently, at the disposal of the commissioners, for the current year, a balance of -	$259,357

The canal revenue for the current year, 1825, *is estimated thus:*

Tolls,	$400,000
Auction duty,	186,500
Steam boat tax,	5,000
Salt duty,	120,000
Interest and principal on sales of land; in part,	6,000
Amount,	$717,500

The canal debt, as follows:

$4,524,270	of stock, at five per cent. The interest whereon,	226,213
2,943,500	of stock, at six per cent. The interest whereon,	176,610
$7,467,770		$402,823

C.

Estimate to a full completion of them.

The Erie and Champlain canals, it is now pretty well ascertained, will be complete early in 1826. It was at one time expected they would be finished this year, 1825, except as to the alteration in the Champlain canal, between Fort Edward and Saratoga falls, which was lately authorized by law.

For a full completion of them, as also to satisfy all claims for damages, the commissioners estimate that there will be required, the further sum of $800,000

Add thereto,

The interest on the canal debt for this year, as is stated, B,		402,823
Amount required for 1825,		$1,202,823
The balance, as stated B, at the disposal of the commissioners, is	259,357	
The canal income this year, is estimated, B,	717,500	
These together, make		976,857
So that the exigencies of the current year, which the legislature will provide for by a loan, amount to		$225,966

The canal debt, to first of January, 1825, as stated, B, is,	$7,467,770	
The sum required, as above,	225,966	
These together, make the amount of debt to the first of January, 1826, when the canals will be nearly finished,		$7,693,736
Deduct therefrom,		
The donation lands, and Grand Island, competent to reduce the debt, this sum,		91,644
Amount of debt to the first of January, 1826; to be extinguished by means of canal revenue,		$7,602,092

D.

Prospectus.

The commissioners observe, that when an uninterrupted water intercourse from the great lakes to the Atlantic ocean, by means of competent canals; such as it is hoped the Erie and Champlain and their accessories will prove to be; shall extend its influence into the almost boundless regions west and north, the effects produced, will be such as to make it not unreasonable to expect there will be, for some few years to come, an augmented proportion in the increase of toll amounts; great as that increase hitherto has actually been, since the works have been in progress. The auction and salt duties will be affected too, by the event, in a like favourable manner. The commissioners think it quite a safe calculation, to compute, for the ten years next ensuing, after the manner which follows:

The average amount of tolls for 10 years, commencing on first January, 1826: annually,	$700,000
The average amount of auction and salt duties, belonging to the canal fund: annually,	420,000
Making together; exclusive of steam boat tax, and bonds in hand, and avails of unsold lands; an average annual income of	$1,120,000

Brought forward,		$1,120,000
From out of which, there will be required as follows:		
The average annual interest on the canal debt,	410,000	
Expenses for repairs, and superintendence,	100,000	510,000
Leaving, consequently, an annual surplus revenue, to be applied to the payment of the canal debt of $7,602,092. This sum,		$610,000

Which, if the ground taken for accruing revenue, be assumed as solid premises, will, by being applied on the principle of a sinking fund, or in purchasing other stocks of the state, be adequate to an entire extinguishment of the said debt, on or before the first of January, 1836. And thereafter, if the same reasoning continue to hold good, and especially if it receive strength from the rapidity of the country's increase in population and general wealth, there will be a net amount of income of a million of dollars and more, and successive additions made to it; which may be turned into the treasury, and thereby may the government be enabled to remove from the people all burdensome taxation; to diffuse the blessings of education more and more abundantly; and accelerate by so much the increasing general prosperity of the state.

NOTE, ADDITIONAL, DECEMBER 31, 1825.

The work has, thus early, been accomplished. On the 26th of October, the Great Erie Canal was in a navigable state; and vessels passed from that lake to the Atlantic ocean. In eight years and a little more, artificial communications of about 450 miles in length, have here been effected to the Hudson river; namely, from Lake Champlain, by the Northern canal; thence to Lake Ontario, by the Western canal and the river Oswego improved; and thence by continuation westward, to Lake Erie at Buffalo;—opening, by the access they afford to other navigable waters in the west, the north, and south, an extent of inland navigation unparalleled in the world.

The expense of these works, in their actual state, including auxiliary and incidental matters, has been 9,267,234 dollars; which is exclusive of interest paid on loans. About 850,000 dollars of this sum is the cost of the Champlain canal.

The canal debt having been increased this year, 1825, by a loan of 270,000 dollars, at six per cent., stands thus:

$4,524,270, at five per cent.
3,213,500, at six per cent.

$7,737,770.

But, the said loan being to be reimbursed on the first of October next, 1826, the canal debt, from loans, will then return to its former point, viz. 7,467,770 dollars.

The amount of tolls received this year, 1825, it is now ascertained, exceeds half a million of dollars. It was estimated in the foregoing statement, at 400,000 dollars. So that the real state of things at the present day, is much better than what was supposed in the calculation; and consequently anticipations being more than realized, we perceive, on taking our prospective view from hence, a still fairer and more encouraging aspect of the great concern, in its circumstances at large and results, than the anticipated prospectus, above laid down, was qualified to present. The ground is not shaken, for what is there predicted of it, from this time forward; but, on the contrary, strengthened and improved.

There are, however, as have been pointed out, many collateral, or additional improvements yet to be gone into, or to be completed; and of the work that is done, some of its parts are not without defects, which will require immediate remedy: but in the prosecution of these operations, which may possibly fill up a series of some years, there can be nothing to interrupt or retard the general prosperous tide of affairs; on the contrary, much to accelerate and advance it, by adding to existing facilities. The increase of transportation will, it is highly probable, "require a double set of locks, and perhaps a canal on the north side of the Mohawk, from Utica eastward." This, or railways, will very soon be required. At the present moment, a prospective view of the affairs of the Erie and Champlain concern, may be taken, as here follows:

The canal debt, to the first of January, 1826, is $7,737,770. After the first of October, it will be	$7,467,770
Which there is a competency to reduce, by donation lands and bonds in possession, to amount, as particularized, of	171,656
Making the amount of debt, to first of January, 1827, to be extinguished by means of canal revenue,	$7,296,114

Revenue for the year 1826, *viz.*

Balance in hand on the first of January, as per statement of the commissioners,	$226,672
Tolls. In 1824, the amount was $289,820; in 1825, $511,280. This year, estimated at	750,000
Auction and salt duties,	350,000
Reimbursement to be made to the commissioners, of this sum advanced by them on account of the Seneca, and Cayuga, and Oswego canals,	58,727
Amount of revenue for the current year,	$1,385,399

Payments for the year 1826, *viz.*

Interest on the loan debt, $7,737,770, to the first of October, and $7,467,770 from that date,	$414,973
Estimated expense of repairing the canals, and collecting tolls,	140,000
Improvements to be made on the Champlain canal,	100,000
Damages, estimated at	50,000
Loan, reimbursable on the first of October,	270,000
Total expenditure,	$974,973

So that, it appears the present year (1826) will have produced a surplus of 680,426 dollars, towards sinking or paying off the debt, besides 100,000 dollars appropriated to an alteration of the Champlain canal; together, 780,426 dollars.

It is confidently expected, the surplus will, in subsequent years, amount to a million of dollars, and more.

The following description of the two canal routes, has appeared in print.

The Erie canal commences at Buffalo, on Lake Erie, near the mouth of Buffalo creek, and proceeds for 10 miles along the shore of Lake Erie, and the bank of Niagara river, to Tonewanta creek, which it enters at its mouth. The channel of the Tonewanta is then made use of for 12 miles, after which, the canal proceeds in a north-east direction, by a deep cut, seven and a half miles to Lockport, where it descends 60 feet by five locks, and proceeds in an easterly direction, on the south side of the Ridge road, and parallel to it, on a uniform level, for 63 miles to Rochester, where it crosses the Genessee river by an aqueduct of nine arches, each of 50 feet span, and immediately after receives a navigable feeder or branch canal, two miles long, which connects it with the Genessee river above the Great falls. It then proceeds in an easterly direction, to Montezuma, 67½ miles, in which distance it descends 126 feet, by locks at various places, and crosses Mud creek twice, by aqueducts, near the villages of Palmyra and Lyons. At Montezuma, the level of the canal begins to ascend, and between this place and the town of Salina, a distance of 27 miles, it rises 67 feet. In Salina, commences the "Long Level," which is preserved through the towns of Manlius, Sullivan, Lenox, Verona, Rome, Whitestown, Utica, and into Frankfort, in Herkimer county, a distance of more than 69 miles. From Frankfort, the canal descends, in the course of 12 miles, 49 feet, to the head of Little falls, where are five locks, each of eight feet descent, and an aqueduct over the Mohawk supported by three arches, connecting the Erie canal with the old canal at German flats. From the foot of Little falls, the canal continues its course for 70 miles down the valley of the Mohawk, on the south side of the river, through Danube, Conajoharrie village, Charleston, Florida, Rotterdam, and the city of Schenectady, to Niskayuna, four miles below Schenectady, where it crosses the Mohawk, by an aqueduct 748 feet long, supported by 16 piers, 25 feet above the river surface. Descent from the foot of Little falls to Niskayuna, 86 feet. After crossing the Mohawk, the canal proceeds along the north bank thereof for 12 miles, and then recrosses by an aqueduct 1188 feet in length, and passes by the Cohoes falls, where, in the space of two miles, it descends 132 feet by 16 locks. A little below the Cohoes falls, a feeder enters from the Mohawk, and connects the Erie with the Champlain canal, and the united work then proceeds to Albany eight and a half miles, in which distance it descends 44 feet, and terminates in the tide waters of the Hudson.

Among the side cuts, or short branches of the Erie canal, are these: viz.

1. One in Watervliet, opposite Troy, where a passage is opened into the Hudson, by two locks.
2. One proceeding from Syracuse, to the village of Salina, at the head of Onondaga lake, one and a half mile.
3. The one referred to, opposite Rochester, by which boats from the canal may ascend the Genessee river more than 70 miles.

The Champlain canal commences at the village of Whitehall, at the head of sloop navigation on Lake Champlain, and immediately rising by three locks, 26 feet, proceeds on a level, five and a half miles, up the valley of Wood creek, enters that stream and follows its channel for three miles, to a lock of four feet lift, which extends the navigation up the creek three and a half miles farther, to Fort Anne village, where, after rising by three locks, 24 feet, it leaves the creek, and proceeds 12 miles on a summit level, through the towns of Fort Anne and Kingsbury, to Fort Edward. Here it receives the waters of the Hudson, above the great dam in that river, by a feeder of half a mile in length, and soon after descends 30 feet, by three locks, into the Hudson below the dam. The great dam is 900 feet long, 27 feet high, and throws back an ample supply of water for the summit level. From Fort Edward the navigation is continued for the present down the channel of the Hudson eight miles, to the head of Fort Miller falls, around which it is carried, by a canal taken out of the east bank of the river, half a mile long, and having two locks of 18 feet descent. From Fort Miller, the river is made navigable for near three miles farther, by a dam at the head of Saratoga falls, just above which the canal is again taken out of the river on the west side, and proceeds on a level for 17 miles, through Saratoga and Stillwater, Schuyler's flats, and over Fish creek by an aqueduct, to a point two miles below Stillwater village. From this point to Waterford, where the canal enters the Mohawk, a distance of nine miles, it descends 86 feet by nine locks, six of which are in the town of Waterford. From Waterford, the Hudson is now made navigable for sloops to Troy, three and a half miles below, by a dam across the river at the latter place, 1100 feet in length, nine feet high, and having a sloop lock at its eastern extremity of 114 feet long, 30 feet wide, nine feet lift. The cost of this lock and dam was 92,270 dollars.

◆

To complete the New-York communication between the Atlantic ocean and the great lakes; as also to spread the advantages of a canal navigation through the state conformably with the main design, it is strenuously recommended to the legislature, by the executive of this state, to take into consideration, and adopt measures for the early execution of the leading works essential to promote the objects contemplated. A series of undertakings are enumerated, as claiming, in this view, the attention of the New-York legislature; namely:

A.—In the first place; a canal between the river St. Lawrence and Lake Champlain; at or near the boundary line of New-York with Canada. Distance, *Miles*, 75

No. 19.

ST. LAWRENCE AND CHAMPLAIN CANAL.

A survey of the route, applicable to this projected canal, has recently been made, and there is not found any formidable obstacle in the way, save that there is a ridge of 900 feet of elevation to pass; on account of which, as this mountain takes an abrupt descent within the dominion of Great Britain, after passing the Canada line, it would be very convenient to run the canal through that territory, in case it were ascertained that the government of Great Britain were willing to agree upon conditions for such a measure. Distance, from the mouth of St. Regis river to the lake, near Champlain town, about 75 miles.

Other routes have been proposed; particularly one from Plattsburg, Clinton county, running westward to a point of the St. Lawrence river at or near Ogdensburg.

A.—Secondly; a junction of the Great Erie Canal with Lake Ontario, through the river Onondaga, or Oswego. Distance, suppose, *Miles*, 75

No. 20.

OSWEGO CANAL.

Some provision for this object, of distinguished importance in the list, was heretofore made by the legislature, but insufficient in amount. By an Act passed 25th April 1825, the commissioners of the canal fund are empowered, for the purpose of carrying on improvements along the river Oswego, and in order to connect, by a perfect navigation, the Erie canal with the waters of Lake Ontario—to raise forthwith, by means of loan, and to employ as the same shall be called for, to the extent of 227,000 dollars, this sum coming up to the engineer's estimates for the accomplishment of the works, taken in addition to what has been already expended. The distance, suppose from Rome, or more probably from Syracuse or near it, to the mouth of the Oswego, 60 to 75 miles.

The completion of this undertaking would seem to be an object of the highest importance, considered in the light of extending the benefits of the great Erie canal into the counties of Oswego, Jefferson, and St. Lawrence, and of giving a neighbourly access, by water, to Upper Canada, as the Champlain canal does, and will more and more, to Lower Canada.

A survey has been made of the route, commencing at Salina village, and passing through the valleys of Lake Onondaga, of Seneca river, and of Oswego river, to Lake Ontario. Fall 160 feet.

A.—Thirdly; it is recommended, to unite in the most accommodating manner, the waters of the lakes Seneca, Canandaigua, Cayuga, and others of the secondary class, with the Erie canal. Distance of one of the suggested communications, by the outlets of Seneca and Cayuga lakes, at which some works of improvement have heretofore been carried on, is *Miles*, 21

No. 21.

CAYUGA AND SENECA CANAL.

An Act has passed the legislature, 20th April 1821, directing this work to be prosecuted. Besides the important navigation improvement implied, it has especially for its object, to drain and reclaim some extensive tracts of land, commonly known and designated as the "Cayuga Marshes." The engineers' report on the subject, proposes to locate the improvements in question, between Geneva on Lake Seneca, and Montezuma, or near it, on the Erie canal, with some choice, open to contingencies, in the line of route to be adopted from Seneca falls to the Erie canal; and upon this point, it is made a duty of the commissioners, to cause such additional surveys and examinations to be made as are needful; and to have the works constructed on such levels, and on such a plan upon the whole, as to sink the waters of Lake Seneca and the river Seneca, so much below their natural levels, as to produce the effect of draining off the marshes at the head of that lake, and the various tracts of marsh and wet land at points lower down. What is proposed to be reclaimed, or partially improved in this way, is very considerable in the aggregate: the tracts are situate on both sides of the Erie canal, and mostly in the midst of a highly fertile district. An appropriation on this article is made, of the sum of 150,000 dollars. The distance, from Geneva, by the Seneca river, to Montezuma, is about 21 miles.

A.—Fourthly; a connexion between the Delaware river

and the Hudson. Distance, - - -	64
Continued to the Lackawaxen, - - -	17
	Miles, 81

No. 22.

THE DELAWARE AND HUDSON CANAL.

This work is likely to be forthwith executed. The company instituted for the purpose, have recently had new privileges attached to their charter by the state, and are now, moreover, privileged, by Act of the state of Pennsylvania, to co-operate and be in union of interest with the "Lackawaxen Canal and Coal Company" of Pennsylvania.

A regular survey has been made of the whole line of the proposed improvements. It extends from tide water of the Wallkill or Rondout river, at Eddy's factory (near Kingston,) through the Rondout and Neversink valleys, to the Delaware river, 17 miles below the mouth of the Lackawaxen river; up which, to the head waters thereof at Keen's mill-pond in Wayne county, Pennsylvania, four or five miles from the coal mines of Lackawannock. Distance in all 117 miles, whereof 36 are in Pennsylvania state, viz:

From tide-water of the Rondout, to the summit level, between the Hudson and the Delaware, in Sullivan county, is 38 miles, and a rise of - - -	feet 535
From summit level, down Neversink valley, to the Delaware river, at four miles above the mouth of Neversink, is 26 miles, and a descent of - - - -	80
Up the Delaware river, to the mouth of the Lackawaxen, is 17 miles, and a rise of - - - - - -	148
Up the Lackawaxen, to head water at Keen's pond, is 36 miles, and a rise of - - - - - - -	668

So that, in these 117 miles, there will be 1431 feet of lockage, as requisite to overcome the rise and fall.

The engineer's total estimate of expense, is 1,208,632 dollars.

Since the foregoing was written, this work has been carried on with great industry, and is much advanced. The greater part is under contract, and it is expected the whole canal as far as the Delaware river, 64 miles, will be finished in the course of next year, 1826, in case the intervening winter should be mild, and favourable to the workmen.

M.—Fifthly; between the upper waters of the Alleghany, the Susquehanna, and the Genessee rivers.

Distance, *Miles*, 250

No. 23.

THE GENESSEE CANAL.

By improvements at the natural obstructions, and canals of connexion from this river to the others specified, a line of navigation may be obtained, thus:—Up the course of the Genessee, from Lake Ontario to Williamsburgh, and thence, on the one hand, up the valley into Cattaraugus county, to Olean or Hamilton, and through Cattaraugus, to where the Alleghany river strikes on Pennsylvania; on the other hand, from Williamsburg, through Livingston and Steuben counties, down the Conhocton and Chemung valley, to the boundary line above Tioga point, or New-Athens. Regular examinations and estimates upon this article, are directed by law, 20th April, 1825.

NOTE.

Examinations on this article are not yet gone through with; but surveys have been partially made of several lines of route, for a canal between Rochester and Olean, or Hamilton, on the Alleghany. By the one proposed to pass through the valleys of the Genessee, Black creek, and Oil creek, the distance is 111 miles; lockage 1059 feet; estimate of cost, 875,588 dollars.

M.—Sixthly; between the Erie canal and the Susquehanna river, along the valley of the Chenango.

Distance, *Miles*, 150

No. 24.

THE CHENANGO CANAL.

The supposed route for this, is from Utica, through Oneida, Madison, and Chenango counties, to Chenango point, in Broome, and thence down the East Branch of the Susquehanna, to the Pennsylvania line, near Tioga point; and it comprehends a distance of 150 miles. Surveys and estimates directed by law, 20th April, 1825.

NOTE.

A survey has been had on this article, taking the route as commencing at Chenango point, or Binghamton, and proceeding up the Chenango valley, through Norwich, to the Erie canal at Whitesborough. Distance, by survey, from Binghamton to Whitesborough, 96 miles; lockage, 1032 feet; estimate of cost, 715,478 dollars.

A.—Seventhly; between Lake Seneca and the Susquehanna river, and Lake Cayuga and the Susquehanna.
Distance together, *Miles*, 50

Nos. 25, 26.

SENECA AND TIOGA CANAL.

CAYUGA AND OWEGO CANAL.

From the head of Lake Seneca, to Newtown, on the Chemung, or Tioga branch of Susquehanna, and from Ithaca, at the head of Lake Cayuga, to the East Branch of the Susquehanna, at or near the village of Owego:—these make together a distance of about 50 miles. Surveys and estimates, directed by law, 20th April, 1825.

Another route of communication has been proposed, which appears to have great advantages to recommend it. It is from the head of Cayuga lake, direct across to the main Susquehanna; that is to say, commencing at the town of Ithaca, ascending the Cayuga inlet, and descending the valley of Shepard's creek, to Tioga point, or near the same. Distance 37 miles.

The canalling facilities are said to be good, and this line is a very direct one for transporting the New-York articles of plaster and salt into Pennsylvania. But, moreover than that, it approaches an extensive range of coal beds, situate on Towanda creek. This creek enters the Susquehanna in Bradford county, about 14 miles below Tioga point; and the coal is found in the Highlands, which terminate the forks thereof, at a short distance from the river, say five or six miles. It is of the bituminous kind, like the coal at the head waters of the Tioga river, and far more accessible for the consumption of New-York. As to abundance, those who have surveyed the ground, report that there is coal enough to supply all the state of New-York with fuel, and that they are of opinion, much the greater part of it will eventually be supplied from these beds.

M.—Eighthly; between the Erie canal at Buffalo, and the Alleghany river at its confluence with the Conewango creek, and Lake Erie, at Portland.

Distance, *Miles*, 120

No. 27.

ERIE, CHATAUQUE, AND CONEWANGO CANAL.

This contemplated route of communication, through Erie county, and part of Cattaraugus and Chatauque counties, in a direction nearly south, to the Pennsylvania line, at the Conewango creek intersection; and thence to Maysville, at the head of Chatauque lake, and to Portland on Lake Erie, comprises a distance of about 120 miles. Surveys and estimates are directed by law, 20th April, 1825.

NOTE.

A survey has been had, with a view to the proposed works of this article: viz.

A canal from Portland, on Lake Erie, to the head of Chatauque lake. Distance, 10¼ miles; lockage, 724 feet; estimate of cost, 398,685 dollars.

A canal from Buffalo, through the valley of the Conewango, to the river Alleghany. Distance, 89 miles; lockage, 856 feet; estimate of cost, 503,312 dollars.

Portland, on Lake Erie, is 60 miles from Buffalo: it has a pretty good harbour, and is becoming of importance as a landing place.

The engineer, who has recently surveyed the Conewango route, states that the proposed canal may be easily extended from the mouth of the Conewango, down the valley of Alleghany, to Pittsburg; and that the expense for the whole distance, of a canal by this route, from Buffalo to Pittsburg, would be less than 2,000,000 dollars.

M.—Ninthly; between Black river of Ontario, and the Erie canal, on one hand; the river St. Lawrence on the other. Distance, *Miles*, 250

No. 28.

BLACK RIVER CANAL.

From Sackett's Harbour, Ontario, by the stream in part, and the valley of Black river, through Jefferson, Lewis, Oneida, and Herkimer counties, to the Erie canal, east of Utica; and from the waters of Black river, by a canal, to the St. Lawrence, at or near Ogdensburg: also from the Erie canal, west of the village of Rome, to intersect the aforesaid route. Surveys and estimates for all of which, are directed by law, 20th April, 1825; and detailed reports are expected, that may enable the points of route to be decided upon.

The distance, by canal and river stream together, may be about 250 miles.

NOTE.

The New-York commissioners have effected, in part, the examinations here directed; and they report as practicable, a route of communication between the Erie canal and river St. Lawrence, from Rome, through Boonville, to Ogdensburg: distance, 114 miles; lockage, 1587 feet; estimate of cost, 931,014 dollars. Or through Camden to the same. Distance, 129 miles; lockage, 635 feet; estimate, 855,630 dollars.

A.—Tenthly; it is recommended, to improve forthwith the upper parts of the Hudson river, so as to remove effectually the there existing embarrassments to its free navigation. Distance, *Miles*, 10

No. 29.

THE OVERSLAUGH.

This is the impediment specially alluded to: it is situate a few miles below Albany; that is to say, between Albany and New-Baltimore, and the removal of it is of so much greater importance, as it is now in a great measure ascertained to be profitable, for canal boats to be attached to the canal exclusively, and transhipments of their lading consequently to be made, whenever they arrive at tide water, or other natural navigation.

It has been proposed to improve the bed of the Hudson at this place, partly by the use of machines, and partly by bringing together, or rather filling up spaces between a number of small islands, so as to confine the current if possible to one channel; and thereby produce a greater velocity, and greater depth of water. By the which, or some other means, there can be very little doubt the object will ere long be attained; not only will the sloop navigation be facilitated, but larger vessels find also a passage up to Albany, Troy, Waterford, and Lansingburg. Some transverse dams have indeed been constructed, and longitudinal ones will follow; and, if such means as these alone have not the desired success, a deep lateral canal or two may possibly be next attempted: the distance is short.

NOTE.

The construction of a ship canal, from Albany to Coeymans, is suggested, and application about to be made for an act of incorporation. Capital 1,000,000 dollars. The distance about 12 miles.

A.—Eleventhly; several canals of connexion between the bays of Long Island, are recommended as very desirable. Distances, together, *Miles*, 50

No. 30.

LONG ISLAND CANALS.

The bays of this important island are directed by law, 20th April, 1825, to be surveyed, and their favourable points for a connexion to be defined; and the same to be reported upon, with estimates.

The bays in view are, particularly, Gravesend bay, Jamaica bay, Great South bay, and across the canoe place, to Southold bay. The aggregate of canal works perhaps 50 miles.

An uninterrupted navigation along the south side of the island, and thence to the bays on the north, is an object of great moment.

And moreover, by an Act of the legislature, 20th April, 1825, surveys and estimates are directed to be made for the six canals designated as next follows, viz:

A.—From the Erie canal, at Syracuse in Onondaga county, through Port Watson, to the projected Chenango canal. Distance, *Miles,* 65

No. 31.

PORT WATSON CANAL.

To be reported upon to the legislature, at their next session.

M.—From the Erie canal, at or near Herkimer, down the Unadilla valley, to the river Susquehanna. Distance, from Utica, or Herkimer, to Bainbridge, on the Susquehanna, and thence down to the Pennsylvania line. *Miles,* 100

No. 32.

UNADILLA CANAL.

To be reported upon to the legislature, at their next session.

A.—From the Alleghany river at Olean, through the village of Batavia, to the Erie canal. Distance, *Miles*, 90

No. 33.

BATAVIA CANAL.

To be reported upon to the legislature, at their next session.

A.—From the Champlain canal, or the Hudson river, along the valley of the Battenkill, to the Vermont line. Distance, *Miles*, 20

No. 34.

BATTENKILL CANAL.

To be reported upon to the legislature, at their next session. A continuation of this canal, within the state of Vermont, to the head waters of the Battenkill, is proposed, as stated at No. 8 of the New-England series.

A.—From Sharon, in Schoharie county, to the tide water of the Hudson, at or below the mouth of Croton river. Distance, *Miles*, 140

No. 35.

THE SHARON CANAL.

To be reported upon to the legislature, at their next session.

A.—From Catskill, on the Hudson river, along the valley of the Catskill and Schoharie creeks, to intersect the Erie canal, west of Schoharie creek. Distance, *Miles*, 60

No. 36.

THE CATSKILL CANAL.

To be reported upon to the legislature, at their next session.

A.—From Lake Erie, to Lake Ontario, by the Niagara river, improved by canal works. Distance from Buffalo to Fort Niagara. *Miles,* 35

No. 37.

THE NIAGARA CANAL.

Application will be made to the legislature, at their next session, for an act of incorporation, to enable a company to make a canal round the falls of Niagara, in Niagara county, to terminate at Lewistown.

NOTE.

An Act was passed, authorizing a boat canal and railway, round the falls to Lewistown; but a bill now before the New-York legislature, proposes to enlarge the object, by water, to a a sloop lock navigation.

The company, by this, may hope to compete successfully with their rival on the other side, the Welland Canal Company. Capital stock, 500,000 dollars.

SUMMARY FOR NEW-YORK STATE.

Natural Navigation,	*Miles,* 265
Artificial Navigation,	1197
Mixed Navigation,	870

To which, add as follows:

Lake George; situate south of Lake Champlain, and communicating therewith by a short outlet, at the old fort of Ticonderoga: it is 37 miles long, and one to seven miles in width, 37

Oneida lake; situate west of Rome, and discharging into Ontario by the river Oswego: it is 25 miles long; five miles wide, 25

Lakes: viz. Otsego, the head of Susquehanna river, nine miles in length; Salina, or Onondaga, seven miles;

Owasco, 14 miles; Cayuga, 40 miles; Skeneateles, 15 miles; Seneca, 35 miles; Crooked, 20 miles; Canandaigua, 20 miles; Chatauque, 19 miles: together, - 179

The rivers; Oswegatchie, Grosse, Racquet, and St. Regis; which fall into the St. Lawrence, - - -

The Big Chazy, Saranac, Sable, and other streams, tributary to Lake Champlain, - - - -

In the order of the counties of New-York, the rivers are as follow:

IN SUFFOLK, L. I.

The rivers; Peconick; Connecticut, Patchogue, Nessaquague, Conetquot, Oriwanke; and Mattatuck creek,

The bays; Huntington, Gardener, Great Peconick, Great West, Great South, Shinnecaugh, Toad, Bullshead, Mecoa, Quonic, Drownmeadow, Setauket, Stony Brook, Acaboutick, Three Mile; and ponds, Ronconcomb, Sagg, - - - - - - - -

IN QUEEN, L. I.

The bays; Rockaway, Parsonage, Merrick, Jerusalem, Cow, Jamaica, Oyster, Little Neck, Hampstead harbour, Oyster, Coldspring, Flushing; and creek Newtown, - - - - - - - - -

IN RICHMOND, L. I.

Freshkill, and other small creeks, - - - -

IN ROCKLAND.

The rivers; Hudson in part, Hackinsack, Passaick, Ramapough; and the Slate creek, - - -

IN WEST CHESTER.

The rivers; Croton, Bronx, Mahanus, Mamaroneck, Hutchins, Sawmill, Hudson in part, Peekskill, Harlaem, Byram; and the ponds, Long, Byram, Rye, - -

IN PUTNAM.

The rivers; Hudson in part, Peekskill, Croton; and the ponds, Mahopack, Crumb, - - - -

IN ORANGE.

The rivers; Hudson in part, Wallkill, Neversink, Mongaup, Ramapaugh, Rutgers, Poplopenskill, Otter; the creeks; Shawangunk, Warwick, Chambers, Moordenars; the ponds; Thompson's, Wickham, Duxido, Cedar, - - - - - - - - - -

IN DUTCHESS.

The rivers; Hudson in part, Roeliff, Junsinskill; the creeks; Wappinger, Oblong, Wassnick, Sprout, Crumb, Elbow, Ten Mile; and the ponds; Saghkill, Londstmanskill, Slissing, Whaley's - - - -

IN ULSTER.

The rivers; Hudson in part, Wallkill, Esopus, Big and Little Shandakin, Rondout, Saghkill, Plattekill, Goodheerskill; and Shin's lake, - - - -

IN SCHENECTADY.

The river; Mohawk, in part; the creeks; Schoharie, Normanskill, Airplaatskill, each in part, - - -

IN DELAWARE.

The rivers; Delaware, Susquehanna, Charlotte, each in part, the Cookquago, Popackton, Little Delaware; Oleont creek, and Beaver creek, in part, - - -

IN SULLIVAN.

The rivers; Delaware, Neversink, each in part; the creeks; Beaver, Ten Mile, Kalkoon, and others, -

IN ALBANY.

The rivers; Hudson, Mohawk, Catskill, each in part, Normanskill, Coeymanskill, Vlamanskill, Bozakill; Hacneraykill in part, Bethlehem, and Black creeks, and Fox creek in part, - - - - - -

IN GREENE.

The rivers; Catskill, Kaatuskill, Schoharie, Hudson, each in part, - - - - - - - -

IN COLUMBIA.

The rivers; Hudson, Greene, each in part; the creeks, Kinderhook, Kleinskill, Abrams, Stone, Roeliff, Jansenskill, Dovekill, and Taghconic, - - - -

The lakes; Cookpake, Fish, Charlotte, and Whiting's,

IN SCHOHARIE.

The rivers; and creeks; Schoharie in part, Cobelskill, Fox, and head of Cookquago. Lake Utsayanthy,

IN RENSSELAER.

The rivers; Hudson, Hosick, each in part, Poestenkill, Wynanskill; the creeks; Little Hook, Quackenkill, Tomhanick, Sunkomissick, Moordenaarskill, Tackewassickill, Tierkenkill; and Sand lake, - - -

IN CLINTON.

The rivers; Big and Little Chazy, Little Sable, Saranac, Great Sable in part, - - - - -

Lake Champlain in part, Chazyhead pond, Cumberland bay, - - - - - - - -

IN WASHINGTON.

The rivers; Hudson, Poultney, Pawlet, Hosick, each in part; the Battenkill, Wood creek, (North) Moses, East, White, Black creeks, - - - - -

The lakes; George, Champlain, each in part; Big pond; South bay, - - - - - - -

IN WARREN.

The rivers; Hudson, and North branch in part, Schroon, East Stony, and Halfway creeks in part, -

The lakes; George, Schroon, each in part, Brandt lake, Friend's lake, Loon lake, French pond, - -

IN SARATOGA.

The rivers; Hudson, Mohawk, Sacondaga, each in part, Snoekill, Anthonyskill, Dwarskill, Mournkill; the creeks; Kayadarassoras, Fish, Glowegee, and Chuckdenunda in part, - - - - - - -

The lakes; Saratoga, Long, Round; and Oval pond,

IN FRANKLIN.

The rivers; Salmon, Little Salmon, St. Regis main and east branches, in part; head of Racquet, Trout, Chateaugay, - - - - - - - -

The lakes; Chateaugay, Saranac, Tupper's in part, and some ponds, - - - - - - -

IN ESSEX.

The rivers; part of Great Sable and branches, Schroon river, part of Hudson north branch, Boquet river, Gilliland's creek; outlet of Lake George, - - -

The lakes; Champlain, George, Schroon, each in part, Paradox lake; Augur, Rattlesnake, Worm ponds; the bays of Peru, and North-west, - - - - -

IN BROOME.

The rivers; Delaware, Susquehanna, Chenango, Tioughniogha, each in part, part of Otselick, and of Owego creek, Nanticoke, Oghquago, and Cocoanut creeks,

IN MONTGOMERY.

The rivers; Mohawk, Sacondaga, Schoharie, each in part; part of East Canada creek; Garoga creek, Stoney, Otsquago, Chuckdenunda, West Stoney, Canajoharie, Nowndaga creeks, - - - - - - -

The lakes, or ponds, at the heads of East Canada, and Garoga creeks, and others in the north-west part of the county, - - - - - - - - -

IN HAMILTON.

The rivers; head waters of Racquet, of Moose, of Sacondaga, of Jessups, of some branches of the Hudson; Piseeka river, and many creeks, - - - -

The lakes, or ponds;

Piseeka, Pleasant, Oxbow, and others, - - -

IN OTSEGO.

The rivers; Susquehanna, Unadilla, Charlotte, each in part; the creeks; Butternut, Otsego, Shenevas, Cherry valley, Oaks, Fly, Wharton, - - - - - -

The lakes; Otsego, and Caneaderago, or Schuyler's lake, - - - - - - - - -

IN COURTLANDT.

The rivers; Tioughniogha and its branches, Otselick in part, - - - - - - - - -

Skeneateles lake in part, - - - - -

IN HERKIMER.

The rivers; Mohawk in part, West Canada creek and branches, East Canada in part; heads of Black, Independence, Beaver, Moose, Oswegatchie, Unadilla rivers, - - - - - - - - -

IN TIOGA.

The rivers; Susquehanna, Tioga, each in part; the creeks; Cayuta, Butlers, Newtown, Cuttetant, and part of Owego, and others, - - - - - -

IN ONEIDA.

The rivers; Mohawk, Black, each in part; part of Oneida creek, and of Fish creek, and western branches, Oriskany creek, West Canada creek in part, Wood creek, Nine Mile, Cincinnati, Saghdequada creeks, - -

Oneida lake in part, - - - - - -

IN JEFFERSON.

The rivers; Black, Indian, Oswegatchie, each in part, Chaumont river; the creeks, Stoney, North and South, Big Sandy, and Perch, - - - - - -

Lake Ontario in part, and some small lakes; the bays; Hungry, Chaumont, Black river; Sackett's Harbour, Henderson's Harbour, - - - - - - -

IN LEWIS.

The rivers; Black, Moose, Independence, Beaver, each in part, heads of Great Fish creek, and Indian river, of Great Salmon creek, and Mohawk river; of a branch of Oswegatchie; Deer creek, Otter creek, - -

IN ST. LAWRENCE.

The rivers; St. Lawrence, Oswegatchie, Gross, Racquet, St. Regis, Indian, each in part, - - - -

The lakes; Black, Cranberry, and Tupper's in part, and small river head lakes, - - - - -

IN OSWEGO.

The rivers; Oswego, and Salmon, Oneida in part; the creeks; Salmon, Grindstone, Catfish, Little Sandy, Scriba, and others, head of Fish creek, - - -

The lakes; Ontario, Oneida, each in part, Fish lake; the bays; Sandy creek, Four Mile, - - - -

IN CHENANGO.

The rivers; Chenango, Susquehanna, Unadilla, Otselick, each in part, - - - - - - -

IN STEUBEN.

The rivers; Tioga in part, Conhocton, Canisteo; the creeks; Mud, Canoe, Tuscarora, Conicodco, and others,

The lakes; Seneca, Crooked, each in part, Mud, Loon, and Little, - - - - - - - -

IN MADISON.

The rivers; head waters of Chenango, Unadilla, Otselick, each in part, Tioughniogha; the creeks; Comassaraga, Cowassabon, Chitteningo, and part of Oneida, -

The lakes; Cazenovia, and part of Oneida, - -

IN TOMPKINS.

The lakes; Seneca, Cayuga, each in part, - -

The creeks; Fall, Six Mile, Cascadilla, and part of Salmon, - - - - - - - - -

IN ONONDAGO.

The rivers; Seneca, Oswego, Onondago, each in part; Salina and Skeneateles Outlets; the creeks; Onondago, Nine Mile, Butternut, Limestone; head of Tioughniogha, part of Chitteningo, - - - - -

The lakes; Onondago, Otisco, Skeneateles, Fish, part of Oneida, and the Green ponds, - - -

IN CAYUGA.

The rivers; Seneca in part, Owasco Outlet and Inlet, part of Salmon creek, and others, - - - -

The lakes; Owasco, parts of Ontario, Cayuga, Skeneateles, Cross; Duck pond; Nine Mile bay, - - -

IN ALLEGHANY.

The rivers; Genessee, and the heads of rivers and creeks which flow into the Susquehanna, into Lake Erie, into the Alleghany, into the Genessee, - - -

IN SENECA.

The rivers; Seneca, Canandaigua, each in part, Seneca Outlet, Tuckyhannock creek, - - - -

The lakes; Ontario, Cayuga, Seneca, each in part; the bays; Port East, Little Sodus, part of Great Sodus, of Ontario, - - - - - - - -

IN LIVINGSTON.

The rivers; Genessee in part, Honeoye Outlet in part; the creeks; Canaveraga, Casaqua, Canesus; the head of Conhocton, - - - - - - -

The lakes; Canesus, and part of Hemlock, - -

IN ONTARIO.

The rivers; Canandaigua in part; the creeks; Red, Flint, Mud, and Salmon; the outlets of Hemlock, of Honeoye, of Crooked lake, - - - - -

The lakes; Canandaigua, Scametica, Honeoye; parts of Seneca, of Crooked, of Ontario, and of Hemlock; and Great Sodus bay in part, - - - - - -

IN MONROE.

The rivers; Genessee in part; the creeks; Irondequot, Stone; parts of Black, of Allen's, of Salmon, of Sandy and other creeks, - - - - - -

Lake Ontario in part; Irondequot, and Braddock's bays,

IN NIAGARA.

The rivers; Niagara, Tonnewanta, each in part; the creeks; Wilkins, Howell's, Tuscarora, Cayuga, and others; and part of Lake Ontario, - - - -

IN GENESSEE.

The river Tonnewanta, and all its head waters; parts of Allen, of Black, of Cattaraugus creeks; the creeks, Anyocheeca, Oakorchard, Johnson, Sandy, and three branches of Buffalo; the heads of Ellicott's, and of Sulphur spring, - - - - - - - -

Lake Ontario in part; the Silver, the Jefferson, and some smaller lakes, - - - - - - -

IN CATTARAUGUS.

The rivers; Olean, and parts of Alleghany, and Connemaugh; the creeks; Oswaya, Tusquiatossee, Tuniauguant, Oil, Ichsua, Great and Little Valley, and part of Cattaraugus, - - - - - - -

IN ERIE.

The rivers; Niagara, Tonnewanta, Cattaraugus, each in part; the creeks; Seneca, Cayuga, Cazenovia, (forming Buffalo,) Ellicott's, Cauquaga, Two Sisters, Sulphur spring, Ransom's, Smoke's, Conjockeda, and others, -

IN CHAUTAUQUE.

The river Conewango; the creeks; Cosdauga, Walnut, Chautauque, Canadaway, French; and parts of Cattaraugus, of South Branch, and Chautauque Outlet, -

The lakes; Chautauque, Cosdauga, Bear, and part of Erie, - - - - - - - - -

Miles, 2573

Unascertained, *Miles*, ...

NOTE.

In the several shipyards of the port of New-York, there are now building as follows:

- 2 Line of Battle ships.
- 2 Frigates.
- 2 Sloops of War.

And repairing:—

- 1 Line of Battle ship.

The above are for foreign account. There are besides, on the stocks:

- 12 Merchantmen.
- 8 Steam Vessels.

And on the stocks of the United States Navy Yard;

- 2 Frigates.
- 2 Sloops of War.

NEW-JERSEY, DELAWARE, MARYLAND, PENNSYLVANIA, AND OHIO NAVIGATION.

N.—From New-York harbour, through Rariton bay, and up the river, to Brunswick in New-Jersey.
Distance, *Miles*, 35

A.—From Brunswick, on the Rariton river, by canal, to the Delaware, below Trenton falls. This line is the one marked out for a water communication, in Mr. Gallatin's Report of 1808, alluded to. The location of the canal now to take place, will probably not differ widely from the plan at that time. Distance, *Miles*, 28

No. 38.

DELAWARE AND RARITON CANAL.

A charter for the execution of this projected work, was granted, by an Act of the New-Jersey legislature, on the 30th December, 1824, conditionally, that the concurrence of Pennsylvania should be given touching one of its provisions; which has in consequence been given, but under certain limits and stipulations, by an Act of the legislature, passed on the 6th April, 1825.

Upon a joint examination, made by commissioners of New-Jersey state, and a board of engineers of the United States appointed to that object, it was decided as most eligible, if not indispensable, that a feeding canal should be constructed, drawing from the Delaware itself a supply of water for the summit-level of the main canal, that appearing to them the only certain source for obtaining an abundance, proper to facilitate a passage, such as the intercourse is likely to require, and adapted to such vessels as navigate the great rivers and bays of the sea-coast. This therefore has been adopted into the plan: the feeder to enter the river Delaware, at or near Bull's island falls, 23 to 26 miles above tide, at Lamberton, and to terminate, and enter the main canal, within a mile or two of the latter's debouche at Lamberton.

The capital stock of the company, which is 800,000 dollars, with privilege to augment to a million if requisite, and an option on the part of the state, of being one-fourth proprietor if its legislature so determine, has been subscribed with eagerness, and preparations for the work are gone into.

The engineers' estimates are,

For the main canal, taking the length thereof at 30 miles, and making, it is said, large allowances,	$475,000
For the feeder, taking it at 25 miles, and large allowances, - - - - - - -	375,000
Together,	$850,000

The location of this canal will, it appears, differ somewhat from the above specification. It is in agitation to run the line from the Rariton, at some miles below Brunswick, and to make it strike across, not to Lamberton but to Bordentown, at the mouth of Crosswick's creek; to which point, in such case, the feeding canal will necessarily be extended downward. But it is besides in agitation, to lengthen this feeder upwards; that is to say, for it to commence, and take its supply of water out of the Delaware, at within a short distance of Easton, in place of taking it out at Bull's island falls. In consequence of which alteration, if it take place, there will be an enlargement of the company's capital stock, to quadrate with the increase of expense.

A still further consideration of the subject, seems to have brought back the original intention of terminating this canal at Lamberton. The New-Jersey commissioners report the following line of route as agreed upon:

The main trunk. Along the Rariton valley, and course of the Millstone creek, to near its junction with Stony brook; through which valley, south of Princeton, to the city of Trenton, and thence to Lamberton, and its point of connexion with the channel of the Delaware. The feeder to commence opposite to Durham, or the confluence of the Delaware and Musconetcong; passing along the margin of the Delaware, through Trenton, to its termination in the main canal, within a mile of Lamberton by the nearest way, and by the feeder itself two and one-fourth miles from Lamberton. Width of the feeder 40 feet; depth of water five feet. It has a descent of 117 feet. The summit level 48 feet. Width of the main trunk to be 60 feet, and depth of water eight, to correspond with the Chesapeake and Delaware canal. Whole length of the canal and feeder 84 miles. Length of the locks on the main canal, 100 feet, measured between the hollow quoins. Width at bottom and between the hollow quoins, 22 feet.

To avoid the shoals of the Delaware below Lamberton, it is proposed to extend the main canal into Pennsylvania, by a construction from Biles creek, opposite Lamberton, across the alluvial soil of Bucks county, to Tullytown wharf, distance five and three-fourths miles; a cut that will moreover be advantageous, in reducing the distance between Lamberton and Philadelphia to 28 miles only, in place of 40.

A new estimate is given as follows:

Main canal, to 59th section, near the mouth of Millstone creek.	$ 313,897
Lockage, and work connected with the locks,	187,600
Continuation of main canal, from 59th section to New Brunswick,	164,000
Aqueducts and culverts,	72,300
Grubbing and making roads,	12,856
Fencing 60 miles of canal and feeder,	38,400
Road and farm bridges,	66,000
Protecting banks of main canal with stone,	20,680
Feeder to Eagle island, five feet deep, 40 feet wide; 20 miles,	212,592
	1,088,325
Contingencies, five per cent,	54,416
	$ 1,142,741

Brought forward, - - -		$1,142,741
Continuation of feeder from Eagle island to Durham, - - - - -	256,875	
Extension of main canal in Pennsylvania, or Pennsbury manor canal, -	87,384	
		344,259
	Total,	$1,487,000

Notwithstanding which, however, a law has finally passed the Pennsylvania legislature, to this effect; that the company be obliged to make their canal below those points, in both rivers, where there is not at all times eight feet of water, and below all shoals, sand bars, &c., allowing them, however, the right to remove those obstructions in the channels of the rivers, if they prefer that to carrying the canal below them; and allowing them also to make the canal across Pennsbury manor. Pennsylvania stipulates also, that should she, at any time after the year 1880, require from New-Jersey the privilege of taking an equal quantity of water out of the Delaware, to that granted to this company, it shall be obligatory on her to grant it. The expense of constructing the canal, under the conditions of this law of Pennsylvania, will, it is supposed, amount to little short of 2,000,000 dollars.

A.—From Trenton falls, by the subsidiary, or feeding canal above specified, to its point of entrance into the Delaware river, at or near Bull's island falls, or elsewhere, as may be decided on. Distance, *Miles*, 25

FEEDING CANAL.

It is partly decided on, as already mentioned, to extend this feeder to within a short distance of Easton.

N.—From Rariton bay, at Perth Amboy, up the Arthur Kull, and Newark bay, and Passaick river, to the entrance of the Morris canal, as next below specified, at Acquacknack. Distance, *Miles*, 30

A.—From Acquacknack, on the Passaick river, by canal, across the state of New-Jersey, to the Delaware river, opposite Easton. Distance, *Miles*, 76

No. 39.

THE MORRIS CANAL.

For this canal, across the state of New-Jersey, north of the one last specified, a charter was also obtained; and the stock of the company has been filled, with a great excess of subscriptions. The work is to commence forthwith. The route surveyed is through Warren, Morris, and Essex counties, making a general course of east and west nearly. It commences at Philipsburg on Delaware, or opposite the mouth of Lehigh river; taking along the north side of the Pohatcung river; after crossing which, it proceeds along the north of Musconetcong valley, to Stanhope, and thence, on the south, to Brookland. Here is the crown, or summit level, deriving water from the lake, or great pond Hopatcung, in the vicinity: from whence the route is down the valley of Rockaway river to its mouth; thence to Little falls of the Passaick, to Patterson, and to Acquacknack.

The details of the route, however, are not yet quite fixed; nor can they be, some of them, but as the work advances. The crown, as above, will give the bottom of the canal an elevation of 888 feet above tide at the Passaick, and 739 feet above the Delaware level at Easton; of the which rise and fall, it is proposed that 1400 feet shall be overcome by the use of inclined planes in place of lockage. The canal to be 30 to 32 feet wide at the water surface, 16 to 18 feet at the bottom, and 4 feet deep, calculated for boats of three feet draft. The engineers' estimate is 809,813 dollars; or, on the supposition of locks being used in the construction throughout, then the estimate amounts to 1,148,103 dollars. At present, the sentiment is in favour of the experiment of inclined planes.

M.—From the junction of the Rariton feeding canal with the river Delaware, up the stream of the Delaware, to the mouths of the Lehigh and Lackawaxen rivers, and thence up to the New-York boundary line, north of Wayne county, near the forks of the Popachton and Cooquago. Distance, *Miles*, 175

No. 40.

UPPER DELAWARE CANALS.

In the Delaware river, there are no precipitous falls. It well accommodates a downward navigation, and this distance of its upper water can, in the season of flood, be also ascended by boats. To render it passable at other times, it is proposed to clear out and deepen the natural channel, to cut down the heads of the falls and pitches; so as to make the descent more gradual and uniform: then, to dam up all, or many of the lakes and ponds about the tributary streams, so as to save water, to be let out only when wanted in the dry season; and lastly, in case of necessity, to construct lateral canals at particular passes. The execution of which, it is expected, will so far improve the navigation of the Upper Delaware, as to enable vessels of a convenient burthen, and particularly steam boats, to run all the summer through, quite up to the forks, and at the rate of four or five or more miles per hour.

◆

N.—From Trenton rapids, down the river stream and bay, to the Capes of the Delaware. Distance, *Miles*, 155

◆

A.—From the mouth of the Schuylkill river, below Philadelphia, by a series of lock and dam improvements, up the river, to Mount Carbon, in Schuylkill county, about fifty miles above Reading. Distance, *Miles*, 117

No. 41.

SCHUYLKILL CANAL WORKS.

This elegant undertaking is nearly complete. It has been prosecuted to the eve of a conclusion, with much taste, by the "Schuylkill Navigation Company." It comprises 28 dams, commencing at Fair Mount water works, near Philadelphia, by which is produced a slack water navigation of 46 miles; also 23 canals, of 32 to 40 feet width at the water surface, 3 to 4 feet deep, and extending together 63 miles: 588 feet is the fall overcome, by 120 locks; which are 17 feet wide, by 80 feet in length, and of which number 28 are guard locks: there are 17 arched aqueducts; a tunnel of 450 feet, cut through and under solid rock; 65 toll and gate houses. Taking the works as commencing at the Lancaster Schuylkill bridge, Philadelphia, and ending at Mount Carbon, the whole extent is about 108 miles, whereof 62 or 63 consists of canals, 46 of pools in the river: along which pools, channels and towing paths are at present made and making.

Single horse boats, it is calculated, will pass the whole distance, from the coal mines to the city, in four days, with convenience, and return in the same time; packet boats, with passengers, in half the time. Toll from Mount Carbon to Philadelphia, six cents per bushel of coal. The cost of these works will amount to 1,800,000 dollars, and upwards.

The whole is now nearly brought to a conclusion. There are as yet a few desirable improvements going forward, and some points are yet to be strengthened and finished off; but, the whole extent has been laid open for use, and already there is an active navigation carried on, promising what it is to become by and by, from the accessions it will receive. From the 16th of March to the 19th of December, 1825, the descending trade has amounted to - - Tons, 15,573
The ascending trade to - - - - - 2,636

Total, - - - - - - - - Tons, 18,209

Which, it is probable, will appear but small, a few years hence, when it comes to be compared with the tonnage that will then pass through the Schuylkill locks, within a similar period. And if the proportion here shown, of about one to six, should be maintained, as there is room now to suppose will be the case, the ascending trade by this route, in comparison with the descending, will much exceed what has been calculated on. It is thought probable, that a deal of merchandise will ascend the Schuylkill from Philadelphia, and be transported from the head of the present navigation, with an advantage, in time and expense, over other routes, to several points calling for it.

The annual report for 1825, has been made; and the following statement exhibits the company's financial situation:

Statement of the receipts and expenditures of the Schuylkill Navigation Company, from the commencement, to the first day of January, 1826.

Amount received from subscribers, -	$1,037,796 26
Do. for tolls, - - - -	23,099 81
Do. rents, - - - -	10,994 69
Do. interest, - - -	3,837 9
Do. for real estate, - - -	893 4
Do. on loan, - - - -	843,273 60
Do. for premiums on loans, -	5,589 40
Do. from the city corporation, for removing the restriction on the surplus water at Fair Mount, - - -	26,000 00
	$1,951,483 89

Amount paid for improvements,		$1,704,948 80	
Do. land, - -		63,405 64	
Do. damages, -		39,701 73	
Do. of interest on loans,		80,911 41	
Balance on hand, in securities, - -	$60,848 89		
In cash, - -	1,667 42		
		62,516 31	
			$1,951,483 89

Received,

In 1818, tolls.	$233,	ho. and gr. rents,	$15		
1819, do.	1202	do.	60		
1820, do.	803	do.	25,	water rents,	$300
1821, do.	1,792	do.	130	do.	296
1822, do.	1,055	do.	243	do.	684
1823, do.	1,964	do.	274	do.	1,164
1824, do.	635	do.	645	do.	2,482
1825, do.	15,415	do.	435	do.	4,275
	$23,099		$1,827		$9,201

By which it appears, that the cost of these works, exclusive of interest on loans, may finally be taken at about 1,850,000 dollars. Of course, to bring in, at the rate of five or six per cent. on this disbursement, there will be required a net revenue of from 95,000, to 110,000 dollars; which it is hoped will, within a few years, be much more than realized.

It was not until the latter part of September, that a thorough navigation, between Mount Carbon and Philadelphia, became established; yet, the tolls down to the end of the season, (about the 19th of December,) have amounted to 15,415 dollars, and it is conjectured, that in all the present year, 1826, the amount of toll will not fall short of 70,000 dollars, besides the income from ground and water rents, which now is about 5,000 dollars. The coal trade is increasing with great rapidity; the demand for coal being, just now, much beyond the means of transporting it from the mines; and the income from general transportation, that is, from other articles than coal, seems likely far to exceed what was anticipated by calculators: the produce of the Susquehanna, it is remarked, is "seeking a conveyance to market, through the Schuylkill." The Union canal, when finished, will be the means of bringing in no small addition to the Schuylkill company's revenue; and it seems moreover, at this moment, to be a favourite project, to construct a *railway*, between the head of the Schuylkill works, and some point of the Susquehanna river, not far from Sunbury.

The annual expenses, for superintendence, after the present year, it is supposed may amount to 13,000 dollars. Of the average annual expenses for keeping the works in repair, there is not, as yet, sufficient experience to speak with any precision; but the sum of these two items, deducted from the amount of tolls and rents, will give, of course, the company's net annual income.

A.—From Reading, on the Schuylkill river, by canal, called "The Union Canal," westward, to Middletown, or confluence of the Swatara and Susquehanna rivers. Distance, *Miles*, 71

A.—From Middletown, as above, by canal, to the mouth of Paxton creek, and taking along the rear of Harrisburg, thence up to the mouth of Juniata river, or thereabout. This is a contingent supplementary work, to be decided upon by the result of inquiries and examinations now on foot; but in the mean time, "The Harrisburg Canal Company" have obtained a charter, to improve a part of the distance; namely, from Paxton creek, to a point of the Susquehanna river above Hunter's falls. The latter is for the purpose, in particular, of supplying the town of Harrisburg with water. Distance, *Miles*, 30

No. 42.

THE UNION CANAL.

This great work, denominated "The Union," from two former companies, chartered to open a canal between the Delaware river and the Schuylkill, and another between the Schuylkill and the Susquehanna, having united, and being now the company prosecuting this work; is, according to a report made by the managers, expected to be finished, so as completely to join the Susquehanna and Schuylkill rivers, early in the year 1827. One-half of it in distance, and about two-thirds as regards difficulties, labour and expense, may be considered as done: this consists of a summit level, at Lebanon, length two miles and three-fourths, (which the engineers have a project of extending,) and nearly all the eastern section, or the descent from Lebanon, to the mouth of the Tulpehocken, at Reading, 34 miles. The canal is 24 feet wide at the bottom, and gives, at four feet depth of water, 36 feet surface: the locks are eight and a half feet, differing in that respect from the New-York canal locks, and those of the Schuylkill, which are wide. The canal has a towing path of ten feet on the south margin, and the number of locks in this descent is 52, overcoming a fall of 300 feet. Along the western section, to the mouth of the Swatara, the fall to be overcome is 210 feet. The whole canal-distance, will be best adapted to boats of 20 to 25 tons burden, which, with one horse, a man, and a boy, to each, will transport their lading at the rate of two and an half, to three miles per hour.

Further, it is in contemplation, as already stated, to extend the line of this communication, from the Swatara to Paxton creek, and thence upward to a point of the Susquehanna river, opposite the mouth of Juniata, or thereabout; which, however, is a contingency resting on the adoption of the Susquehanna and Juniata rivers, as one of the great thorough water communications from east to west. The Union canal, not including this adjunct, was estimated at 1,000,000 dollars cost.

Since the above was written, the annual report of the president and managers has been laid before the stockholders, 15th November 1825, which exhibits a fair prospect of this canal being finished, and in use, early in the year 1827, if not by the end of 1826. Nothing material, of the eastern section, now remains to be done, except in front of Reading, and that will be completed next spring. It is proposed to erect a dam across the Schuylkill river, at the mouth of the Tulpehocken, and extend the canal about two miles downward from Reading, thereby rendering more perfect and commodious, a union with the Schuylkill navigation works, and giving to the borough of Reading a fine harbour, that will be of vast consequence to her.

On the western section, the valley of the Quittapahilla, at first intended for the route, has been abandoned, and a more advantageous one taken up; which passes from the west of the old summit, first to Snaveley's farm; thence, by a tunnel of 286 yards, to the valley of Clarke's creek, and to the Swatara; over which, passing by an aqueduct, it continues on, along the western side thereof, to the Susquehanna. From the western extremity of the old summit, to within a mile of the Swatara mouth, at Middletown, there are 74 half-mile lengths, all under contract, and the contractors are obligated to complete these portions by the 1st October, 1826. The mile still in reserve, (which is to crown the whole,) will be disposed of, so as to meet the other work. Making allowances therefore, the entire of the Union canal will probably be finished and in use, by the spring or summer of 1827. In consequence of the alterations mentioned, the distance, altogether, will be increased to about 77 or 78 miles.

On the eastern section, including the summit level, the expense incurred amounts to 524,979 dollars: and for the western section, it is estimated now at 550,000 dollars.

The plan of this canal, as now fixed, is thought to possess great advantages; insomuch, that at a future day, when the trade of the country shall require it, a double set of locks may be constructed; with the practicability of raising, by mechanical power, at a moderate expense, the whole contents of the Swatara river into the summit level, if it shall be needful; and by this operation, have at command an abundance of water, to answer occasions, when things shall have advanced to the state anticipated.

A bill, to authorize the Union Company to extend a navigable feeder of the canal to the coal mines at the head of the Swatara, is before the state legislature. It has passed.

A.—From the mouth of Lackawaxen river, on the Delaware, by canal and slack-water improvements, up the course of the former to its head waters, situate four or five miles from the coal mines of Lackawannock.

Distance, *Miles*, 36

No. 43.

LACKAWAXEN CANAL.

By an Act of the state of Pennsylvania, passed on the first of April, 1825, the "Lackawaxen Canal and Coal Company," instituted to improve the navigation of the river Lackawaxen, are authorized also to act in union of interests with the "Delaware and Hudson Canal Company" of New-York. By which union, the projected works of improvement in both states make one whole, extending from the sources of the Lackawaxen to the Hudson river, at or near Kingston, as is particularized in the "Delaware and Hudson" article, already inserted, and whereof 64 miles lie in New-York state, 36 miles in Pennsylvania, besides 17 miles common to both.

◆

A.—It has been proposed to extend the canal, last above specified, to the Susquehanna river; that is, from the head water of the Lackawaxen, at Keen's pond, down the Lackawannock valley, to Pittston; 33 miles.

But the mountain to be passed in this route, is 250 feet above the level of Keen's pond, which is 1431 feet above tide; and Pittston is 496 feet above tide; so that there would be an abrupt lockage of 1435 feet; likely to set aside the attempt at present, even supposing there is no want of water for a summit level, without a long tunnel; which does not appear to have been regularly ascertained as yet. Distance, *Miles*, 33

No. 44.

LACKAWAXEN AND PITTSTON CANAL.

A proposed communication, between the Lehigh, and the Susquehanna at Wilkesbarre, by way of Solomon's creek, is said to present more facility of execution: the route is the one in the following article.

A.—From Lausanne, on the Lehigh, to Green Mount run, otherwise called Sandy Island run. Ascent 495 feet. Distance, 21 miles.

Green Mount run to summit level, in which the use of inclined planes is suggested. Ascent, 361 feet. Distance, 6¼ miles.

Summit level through a tunnel, to Solomon's creek. Distance, 8½ miles.

Solomon's creek to Wilkesbarre, in which also the use of inclined planes is suggested. Descent, 894 feet. Distance, 4¼ miles.

Rise and fall, 1750 feet. Distance, *Miles*, 40

No. 45.

THE LAUSANNE AND WILKESBARRE CANAL.

As above.

◆

A.—From Stoddartsville, on the river Lehigh, another coal region of Pennsylvania, by a series of slack-water improvements, accomplished and to be accomplished, to the mouth of that river, at Easton, on the Delaware.

Distance, *Miles*, 84

No. 46.

THE LEHIGH NAVIGATION.

An Act of the state, dated 20th March, 1818, authorized navigation improvements along this mountain stream, the fall of which, in the course of 100 miles, is not less than 1650, or 1700 feet: from Stoddartsville to Easton, 1184 feet; and to overcome this last, is within the undertaking of the "Lehigh Coal and Navigation Company." They are obligated to render this distance navigable; and Messrs. White and Hazzard, the superintending engineers, have already succeeded in the work, to within about 30 miles of the upper point. They have, by means of dams and falling locks, rendered the stream navigable for their coal vehicles, called arks, from Mauch Chunk, the seat of the coal beds, downward to Easton, which is 46 miles, and has a fall of 330 feet; and this degree of their success, has opened an active and increasing transportation of anthracite coal to a market for its consumption, particularly to Philadelphia.

Still, however, the actual navigation is no more than a downward one on the Lehigh. Thoughts are entertained of effecting an upward navigation, and the able engineers of the company do actually promise that they will effect it, from Easton as high as Mauch Chunk, so soon as the river Delaware itself shall be improved, by canal or otherwise, for its ascending navigation to reach up to Easton.

Any ascending navigation of the Lehigh, much higher than the coal beds, although not impracticable, would be difficult and expensive. But it seems probable that there will be accomplished, ere long, some kind of connexion between the waters of the Lehigh and the Susquehanna, in favour at least of a descending transportation of bulky commodities; in particular, of coal.

From a very recent, but not altogether conclusive, examination of the ground, it is conjectured that a cut, of but a few miles in length, is practicable, as in the article next following; the summit commanding, it is thought, a sufficient supply of water.

NOTE.

From the mouth of Mauch Chunk creek, a road of nine miles conducts to the coal mines; which are situate at the summit of the mountain, 1006 feet above the level of the Lehigh at the mouth of Mauch Chunk creek.

* * *

A.—From Berwick, on the Susquehanna, through the Nescopec valley, to Lowrytown, on the Lehigh, 16 miles above Mauch Chunk; or to Lausanne. Summit, 948 feet. Distance, *Miles*, 35

No. 47.

THE BERWICK AND LEHIGH CANAL.

This, together with some of the preceding projects of communication, here inserted, whether the same be executed throughout in the form of navigable passes, or, as it appears at present probable, by means, in part, of *railroads*, will evidently be much stimulated by the progress and completion of the Rariton canal; in consequence of a close connexion of interests. There will be established a transportation direct across to New-York, not only of the Lehigh coal itself, but also of that produced from the ranges of coal beds, situate on the Susquehanna and neighbouring waters; as thus:

From Wilkesbarre, by canal or railroad, to Lausanne, on the Lehigh,	*Miles*, 40
Lausanne, to the mouth of the Lehigh, at Easton,	49
Easton, passing down the Delaware, and through the feeding canal, and the main canal, to Rariton river,	80
Thence to New-York,	35
Distance,	*Miles*, 204

A canal has also been proposed, from the mouth of the Lackawannock, at Pittstown, on the Susquehanna, through Northampton, to the Delaware, at the Water Gap, 24 miles above Easton, as is inserted in the article which here follows. This route, continued on to New-York, would be still more direct, by 20 miles; viz.

From Pittstown to Water Gap,	*Miles*, 45
Water Gap to Easton,	24
Easton to New-York,	115
	Miles, 184

A.—From the mouth of the Lackawannock, at Pittstown, on the Susquehanna, by canal, across the head waters of the Lehigh river, through Stoddartsville, and through Northampton county, down the Pocano, or Broadhead's creek valley, to the Delaware river, at the Water Gap. Distance, *Miles*, 45

No. 48.

LACKAWANNOCK AND NORTHAMPTON CANAL.

This proposed canal route, like one or two others, to connect the waters of the Susquehanna and the Delaware, has not yet been satisfactorily surveyed; but the importance of the project will not fail to bring it forward. It will open a very direct communication between Philadelphia and all the Wyoming district of country, abounding in coal of the anthracite kind. The intended improvements in the bed of the Delaware, on its upper waters, will take place, to meet the occasion. This route is shown too, in the preceding article, to be 20 miles more direct than by the Lehigh route, across to the city of New-York. It will, moreover, become a leading route to and from the counties in New-York state, south of the secondary lakes.

In the latter point of view, indeed, an easy and commodious communication between Pittstown and the Delaware river, appears to be an object extremely desirable; more so, perhaps, than on every other account; and might fully warrant the construction, not only of a canal, but of a railroad also, upon the very best plan, to accommodate the probable transportation trade. This route will, there can be no doubt, become a most active thoroughfare for much of the produce of a very rich wheat country, and the return trade; and Pittstown and Wilkesbarre will rise in importance, as places of depôt on an extended scale.

Since the above was written, application has been made to the legislature of Pennsylvania, for an Act of incorporation, as "The Delaware and Susquehanna Canal and Railroad Company;" capital stock, 1,500,000 dollars. The works to commence at Lackawannock, and proceed to the Delaware Water Gap, and to Easton. Application also, for another Act of incorporation, constituting "The Wilkesbarre and Delaware Central Railway Company;" capital, 1,000,000 dollars, to make the connexion in a line from Wilkesbarre to the Delaware Water Gap. Likewise, another Act of incorporation for "The Lackawannock and Susquehanna Railroad Company;" capital, 150,000 dollars. The line of connexion, from the Susquehanna to the Belmont coal beds.

A.—From the Lehigh river, near Allentown, by canal, along the Jordan and Perkiomen valley, to the river Schuylkill. Distance, *Miles*, 40

No. 49.

THE PERKIOMEN CANAL.

As above.

M.—From the river Schuylkill, at a point above Kittatinny mountain and below Orwigsburg, by the East branch, or Little Schuylkill valley, and that of the Catawissa creek, through Schuylkill and Columbia counties, to the Susquehanna river, near Danville. Distance by canal, or the stream improved. *Miles*, 50

No. 50.

THE CATAWISSA CANAL.

An Act has passed the Pennsylvania legislature, empowering the governor to grant a charter for a portion of this projected work; that is to say, for effecting a lock navigation along the East branch of Little Schuylkill river, to the coal mines: subscription books to be opened on the 11th June, 1826, by commissioners appointed for the purpose.

A.—From Newbold's landing, on the river Delaware, nearly opposite to Fort Delaware, Pea Patch island, westward, across the Peninsula, to Back creek, Maryland, on the Chesapeake, four or five miles south of Frenchtown, and near the mouth of Long creek.

Distance, *Miles*, 14

No. 51.

THE CHESAPEAKE AND DELAWARE CANAL.

This work commenced on the 5th of April, 1824, and is in such vigorous prosecution, that, barring casualties, it will be complete for navigation before the year 1828. It is to be 60 feet wide at the water surface, 36 feet at the bottom, 8 feet depth of water, and at every half mile, to have recesses for the passing of vessels, where the width will be increased to 110 feet. There will be no more than two lift locks, one tide lock at the Delaware, and another at the Back creek termination.

The line of canal is divided into seven sections; Nos. 1, 2, 3, to St. Georgestown, distance four miles and a half, to be made on the thorough cut plan, the bottom 10 feet below the level of common high tide on the Delaware; Nos. 4, 5, 6, as far as Broad creek, seven miles and three quarters, to have, for the present, the bottom on a level with common high tide; No. 7, which is through Broad creek to Back creek, one mile and three quarters, to have the bottom six feet below the common high tide level of the Chesapeake.

The section No. 5, comprises a deep cut of three miles and three quarters, and of 76 feet in depth at its highest part; and this summit, which is eight feet above common high tide, is plentifully supplied with water from the drainage of the adjacent country, or the creeks on either hand, which empty into the Chesapeake and the Delaware respectively.

The peculiar and very interesting feature of the arrangement, is, that it may be regarded as provisional; for it contemplates an enlargement, at a future day, whenever it shall be decided to make this canal into a passage for ships: a project which can readily be executed, on the thorough cut plan, by deepening the sections Nos. 4, 5, 6, ten feet, and the western section, No. 7, two feet; and then there will be a canal throughout, with a command of the Atlantic ocean for its reservoir, to give constant passage to large vessels, as well as to small.

Furthermore, details have been submitted for the improvement of this canal, at some future day, to such a scale as for it to be adapted to the passage of ships of war, drawing 20 feet of water, and so far to correspond with the great Caledonian canal. In which ultimate improved state, the engineers' estimate of cost for it, has been given in at two millions of dollars.

On the plan of its immediate execution, it will be sufficient for a passage to our coasting vessels, and will at the least, in this respect, equal in accommodation the Dismal Swamp canal, between Virginia and North Carolina, as also the Delaware and Rariton canal, as at present projected.

In regard to cost, on this provisional scale, the estimate is 1,250,000 dollars. Towards which, the general government is, by virtue of an Act of Congress, a subscriber to the joint stock of the company, for	$300,000
The state of Pennsylvania, a subscriber for	100,000
The state of Maryland, for	50,000
The state of Delaware, for	25,000

Connected with the work, there is constructing, at the eastern debouche of the canal, on the Delaware river, a capacious harbour for shipping. Form of the harbour, semicircular; with an opening of 150 feet, at that part of the arch where the main current of the river forms a tangent to it, and where vessels will be received and delivered in 20 feet of water, near upon the edge of the river channel. The whole, for solid security, no less, but rather much more, than for beauty even, to be finished with facings of stone, from the top of the embankments to the bed of the river.

The Delaware tide lock of the canal, which is 100 feet in length between the gates, and 22 feet in the chamber, and containing 40,000 feet of solid masonry, is finished; the Back creek lock will correspond in dimensions.

The summit level, above noticed, makes, in consequence of the deep cutting there, an elegant site for a bridge, that will be thrown across, with a span of 200 to 250 feet, and the under side of the arch 90 feet above the bottom of the canal.

NOTE.

It is not unworthy of being remarked, that the Delaware and Chesapeake communication, may be considered as the parent of all canal projects in this country; having, from certain causes, attracted the attention of the commercial and enterprising community of Philadelphia, at a period very soon after the time when canals commenced in England. We find, that as early at least as the year 1767 or 1768, the matter was seriously taken up, and prosecuted by Mr. Thomas Gilpin and other gentlemen; who were at great pains in accomplishing a number of surveys, and giving estimates to the public, for a canal from Duck creek to the head of Chester. In 1769, a condensed view of all that had been done, was presented by Mr. Gilpin to a committee of merchants, formed in Philadelphia, for the purpose of improving the trade of the province; as also to the American Philosophical Society: and this was soon followed by a survey, and remarks upon another route; viz. from Bohemia river to Appoquiminink; after which, the Elk route was also examined. These and many other particulars of what was done, previous to the Revolution, to promote the object in question, and again subsequent to that event, when the time had come round for the subject to be taken up anew, have been given to the world, by a descendant of the gentleman above named, in an historical work, not long since published. And it is curious to observe from it, how intimately the idea of this very improvement could identify itself, at that early day, with the country's best interests and future prosperity, in the minds of many patriotic individuals. They were, however, not a little enlightened, as it would seem; nor a little zealous in the cause; and not a little, perhaps, of the present day's success, in the accomplishment of their wishes, is to be attributed to their own diligent efforts, followed up and persevered in to the end, by some of their descendants, successively, through every change of circumstance.

N.—From Frenchtown, (Maryland,) down the river Elk, to Chesapeake bay, and up the Patapsco river, to Baltimore. Distance, *Miles*, 60

A.—From Baltimore, or tide water of the Patapsco, by canal, northward, to the Susquehanna river, above Conewago falls. Distance, according to a survey made of the ground, *Miles*, 92⅜

Whereof	36. 75.	Across the valley, to near Havre de Grace.
	14. 12.	Thence, along the margin of the Susquehanna, to the Pennsylvania line.
	41. 51.	Thence, to the head of Conewago falls; this section being wholly within the state of Pennsylvania; and therefore, requiring its concurrence in the construction; for which, application will be made to the legislature.

Total lockage, 335 feet.

No. 52.

THE BALTIMORE AND SUSQUEHANNA CANAL, OR YORK-HAVEN CANAL.

This proposed canal, surveyed by commissioners of the state of Maryland, and reported upon to the legislature as practicable, although for nearly 56 miles it must run along the margin of the river, and be of expensive construction, has for object, to augment the trading intercourse between Baltimore and the various and distant tracts of country watered by the Susquehanna and its branches; and may be considered, in relation to the city of Baltimore, as an object of interest, to about the same degree, for the upward as well as downward trade of the river, as the contemplated Pennsylvania canal, below inserted, through the counties of Chester and Lancaster, on the east side of the Susquehanna, in relation to the city of Philadelphia. The engineers' estimate of expense, for the 92⅜ miles, is 2,600,000 dollars.

A vote has passed the Maryland house of delegates, appropriating 500,000 dollars towards the execution of this work.

A.—From Baltimore, or tide water of the Patapsco, by canal, through the district of Columbia, to the Potomac river, at the Little or the Great falls.

Distance, about *Miles*, 55

No. 53.

THE BALTIMORE AND POTOMAC CANAL.

This is contemplated as a continuation, across to the port of Baltimore, of the proposed grand opening, by water, to be effected between Washington city and Pittsburg, by way of the Potomac valley, as described in the article below inserted.

Surveys, as to this supplementary work, from Little falls, Potomac, through Washington to Baltimore, have not been as yet completely made; they were gone into, and calculations made, incidentally to examinations that were then on foot, for a canal, to enter the Potomac at a different point. The examinations will be completed, in connexion with those for the primary work, now going forward.

Taking the distance at about 40 miles, and the lockage between Little falls and tide water of the Patapsco, at 323 feet, the engineers' estimate was 719,213 dollars; but, allowing the distance and the lockage to be in reality both greater, according as one only, or as two summit levels may be found to be requisite, the expense of construction will, of course, be greater; but it is said can hardly, from what is positively known, come up to a million of dollars.

The Little falls, Potomac, is 37 feet above tide; consequently, presents a saving of 74 feet in lockage, for a canal to Baltimore, taken from thence, compared with one, if the work were commenced at the tide water below; for it is ascertained, that at this level of 37 feet above tide, a canal can pass through the city of Washington, north of the capitol, with facility.

A route different from this has been proposed, for a canal communication with the Potomac; namely, from Baltimore to the mouth of the Monocacy river, about 50 miles above Georgetown; and as yet it is not certain, which of the two may, in preference, be adopted.

NOTE.

The Maryland house of delegates have passed a vote, appropriating 500,000 dollars, as a subscription of the state, towards effecting "a canal communication between Baltimore and the Potomac river."

M.—From the mouth of the Susquehanna, below Havre de Grace, up the river stream, in its contemplated improved state, and by lateral canals at particular rapids, through the Pennsylvania counties of Dauphin, Northumberland, Columbia, Luzerne, Bradford, to Tioga point, otherwise called New Athens; and thence to the New-York line, either by way of the Tioga branch, towards the head of Seneca lake, or by the Owego branch, towards the head of Cayuga lake; a junction being proposed with one or other of these lakes, or perhaps with both, as is already inserted at the New-York article.

Distance, to the New-York line, *Miles*, 275

No. 54.

THE SUSQUEHANNA RIVER, NORTH ROUTE.

By an Act of the legislature of Pennsylvania, 25th March, 1825, the governor of the state was empowered and required to make additional appointments of commissioners, for the purpose of ascertaining with precision, the navigable capabilities of the river Susquehanna throughout, and of carrying into effect such measures as may realize the local facilities discoverable, for opening communications, through the Susquehanna, with the west and the north.

Towards improving the navigation of this section of the river, an appropriation was, at the same time, made by the legislature; and this work, which has reference to the bed of the river, between the towns of Columbia, and Northumberland or the mouth of Juniata, is now in active prosecution:

contracts have been made with individuals, and much is expected to be done before the present season closes.

The lower points of the river, that is to say, from Columbia down to tide water, are also attended to by the commissioners, under an Act of 1823, conjointly with a board of commissioners of the state of Maryland. In their report, made last December, 1824, details are given, as to several obstacles to the descending navigation having been, during the past season, removed. The report contains, likewise, an opinion, that an *ascending* navigation, from tide water to Columbia, may be effected, if the expense of it, consequent on the difficulties of the ground, does not prevent.

But there are, likewise, taking place, from day to day, improvements in the construction of steam boats, which possibly may result in vastly curtailing the labour, requisite otherwise to be bestowed upon the other class of river improvements; that is to say, what is at this moment a particular object of research is, to reduce, by mechanical means, the boat's draft of water, and to communicate, at the same time, to paddles, or other essential part of the boat's movement, an increase of power, whereby some rapids may be stemmed, which hitherto have been quite impassable. A steam boat, named the Susquehanna, launched not long since, on experiment, was brought to navigate, upon an even keel, at a draft of 18 inches fore and aft; but this, in the present state of things, will not clear the shallow rapids; and another boat is building at present, in Baltimore, on a plan to draw less water than the "Susquehanna."

Moreover than this, there is a sheet iron vessel building at York, of the dimensions of 60 feet keel, nine feet beam, three feet depth; the weight of iron employed to be 3400 pounds, and the weight of wood work, for cabin, deck, &c., to be 2600 pounds. Weight together, 6000 pounds, or suppose three tons; the steam engine, boiler included, to weigh two tons; making, for the whole weight, five tons; which is to have no more than five inches draft of water, and for every ton of lading, or weight of any kind taken on board, the boat's draft to be one inch additional. The engine is upon the high pressure principle, calculated to bear 600 pounds to an inch; but is to be worked with not more than 100 pounds to the inch. The power of the engine to be that of 10 horses, and the space for it to occupy in the boat, 10 feet, by three feet four inches: anthracite coal to be used exclusively, for the production of steam.

All these circumstances taken together, warrant a conclusion, that the course of the main Susquehanna, and north-eastern branch, will become completely and conveniently navigable, for all the purposes of descending navigation and transport; and possibly for the ascending also, without an interruption. Little or nothing is now wanting for the object, as far downward as the Conewago falls, even from the head of Otsego lake, in the heart of New-York state, except occasionally, at certain points, deeper water; the upper parts of the river, in many places, spreading out into shallows; but for which the remedy, in general, will not be very difficult; the channel can be contracted, and thereby deepened: it can be cleared, at particular places, of a few obstructing rocks.

During the Revolution war, the whole distance, between the head of Otsego lake and Tioga point, was navigated by a brigade of the army, with all their artillery, their horses, and munitions of war, free from any loss or accident, though this was in the latter part of summer. It was done by means of an artificial freshet or flood, produced from a head, which the men had succeeded in raising, by the labour of about six weeks, in damming up and watching. A project that was conceived, and brought to bear, by the enterprising spirit of a soldier of distinction, (the late general James Clinton,) although not one man of the brigade, such was the wild state of the country down to that period, had ever before so much as seen that branch of the Susquehanna river.

Since the above was written, the sheet iron boat, Codorus, was launched at York; and after passing the locks at Conewago, was directed up the Susquehanna river. She passed the rapids on her way successfully, and is now at anchor opposite Harrisburg. She stemmed, with great ease, the ripples opposite M'Claysburg, and passed through Miller's ripples, to Cockstown. Her draft of water, with all her machinery on board, is six inches and a half; and for every subsequent ton of lading, or of passengers, one inch more. She can accommodate about 70 passengers.

The channel of the Susquehanna is under contract for improvement, at the several rapids upwards from Conewago, undertaken so as that there may be afforded at least 12 inches of water in depth, by 50 feet in width: and as soon as this shall be effected, a boat, on the plan of the Codorus, may then pass up, with 70 or 80, or more passengers on board, or other equivalent weight.

The Codorus experiment has determined with precision, the depth and width of channel requisite to accommodate vessels of this construction. It has determined that rapids, provided they have 12 inches of water, and a straight channel of 50 feet, can be passed up by such vessels, with at least five tons of lading.

Still subsequently to the above: there is now issued a report of the commissioners of Pennsylvania, acting under the two laws for improving the river Susquehanna; viz. one taking it from Columbia upwards, to Northumberland town; the other, from Columbia downward, to tide water. The report is dated 17th November, 1825, and states,

That, from Columbia upwards, the commissioners have this year (1825) carried their examinations as far as Liverpool, and issued contracts for works upon the bed of the river, at the principal rapids, and most difficult places in the way; leaving, however, many others to be attended to hereafter; some of which contracts are already fulfilled, the rest in progress; and so far, improvement is accomplished. A new appropriation, required of the legislature, will enable the commissioners to extend their operations from Liverpool upward, as contemplated, and also to take in, and place under contract, those situations, which, for this season, they were obliged to pass over. It appears, that in addition to clearing and sinking the river bed, a certain number of wing dams must necessarily be constructed, in order to secure a navigable channel, at every point, throughout the dry season of the year.

From Columbia downward, contracts *in toto* have been issued, and the most of them have been fulfilled; which has already improved this passage, rendering places, before dangerous to navigate downward, now easy.

In the next season, (1826) wing dams are to be constructed at a number of places between Columbia and the head of the Maryland canal; and the remaining contracts on the river bed will, no doubt, be complied with. All which being accomplished, it is asserted, there will not then be any further improvement practicable upon the natural stream, from Columbia down to tide water.

A.—From Tioga point of the Susquehanna, by canal and slackwater navigation on Tioga river, to the coal mines, at Peter's camp. Distance, *Miles*,

No. 55.

THE TIOGA CANAL AND NAVIGATION COMPANY.

An Act of incorporation for this proposed work of improvement, is applied for to the Pennsylvania legislature. Capital, 125,000 dollars.

A.—From Port Deposite, on the east bank of the Susquehanna, along a line of rapids, north, to the boundary line of Maryland and Pennsylvania.
Distance, by canal, *Miles*, 10

No. 56.

PORT DEPOSITE CANAL, MARYLAND.

This was constructed several years ago, by the state of Maryland. Canal works on the west side of the river, as high at least as Columbia, will undoubtedly be carried up ere long; being now ascertained to be practicable at no very uncommon expense.

N.—From Frenchtown, Maryland, down the river Elk, to the Chesapeake bay; and up the Patapsco river, to Baltimore. Distance, *Miles*, 60

A.—From Safe harbour, Susquehanna river, at the mouth of Conestoga creek, by canal and slackwater passage, up the course of the creek, to Lancaster city.

Distance, *Miles*, 18

No. 57.

THE CONESTOGA CANAL.

By an Act of the state, bearing date 28th March, 1820, Mr. James Hopkins was empowered to improve this navigation. The citizens of Lancaster have the thing now in progress. The works will comprise a canal and eight dams, with their locks, overcoming 70 feet of fall. An Act of incorporation passed the legislature for it, on the 3d March, 1825.

It appears, that a contract has been entered into with the company, for a steam boat navigation, to be effected from the city of Lancaster to the Susquehanna river, by the 4th day of July, 1827. Consideration, 53,240 dollars.

A.—From foot to head of Conewago falls, west side of Susquehanna river, York county, Pennsylvania; and the same, east side, Dauphin county; by canals.

Distance, together, *Miles*, 2¼

No. 58.

CONEWAGO CANALS.

Both these, under the authority of legislative Acts, were long since constructed. Two dams, one of 800 feet, the other of 500 feet, are connected with the works. The fall surmounted is 21 feet.

A.—From a point on the river Schuylkill, at or near Valley Forge, by canal, through the Pennsylvania counties of Chester and Lancaster; or, perhaps, through Delaware, Chester, and Lancaster, to the Susquehanna river. Distance, viz.

From Philadelphia, up the river Schuylkill, to Valley Forge, - - - - -	
Thence, along the valley, north side, to the Gap, 16 miles east of Lancaster city, - -	38
From the Gap, passing by Lancaster, and up the course of the Susquehanna, across the Chickesalungo creeks, and the Coney, and the Conewago, to the Swatara river, at Middletown,	45
From Middletown upwards, to the mouth of Paxton, or Hunter's falls, or other higher point of the Susquehanna, convenient for crossing it by an aqueduct, as is already inserted at the Union canal article, - -	
	Miles, 83

No. 59.

THE DELAWARE AND SUSQUEHANNA CANAL.

This is to be viewed as one section of an entire Pennsylvania line of canal, from Philadelphia to Pittsburg; the practicability of which first section, and in part as to the others, has been ascertained, as appears on the face of a report, made by the state commissioners, dated 2d February, 1825.

In consequence whereof, and to obtain further and more specific information, the legislature resolved to proceed in the research by an increased board of canal commissioners, and passed a law, under which the governor has made appointments accordingly; five characters were by him selected for the duty; and more comprehensive examinations are in consequence now on foot, to be reported upon, when accomplished. In the meantime, the line of communication, as it has been contemplated, may be stated to run thus:

Section 1. From Philadelphia, to the river Susquehanna at or near Harrisburg, to be determined by the best plan for taking the water out of that river, and crossing it by an aqueduct.

Section 2. From the east bank of the Susquehanna, across to the west, and up the course of the Juniata river to the upper fork of the Frankstown branch, below Holydaysburg, in Huntingdon county.

Section 3. From the Juniata forks, over the Alleghany mountain, to the forks of the Little Conemaugh river, in Cambria county.

Section 4. From thence, down to Pittsburg.

A.—From the mouth of Paxton creek, or such other point of the Susquehanna river, as may be struck by the canal last above specified; across by an aqueduct, and from thence up the Juniata valley to a situation on the upper waters thereof, whence a navigable communication can be formed with the waters of the Kiskimenetas, and so by the course of that river, and the Alleghany, downward, reach the Ohio, at Pittsburg. Distance, by canal altogether, or perhaps, in part, by river stream, as follows: viz.

From the mouth of Paxton creek, below Harrisburg, to the Juniata, and thence, through Perry, Mifflin, and Huntingdon counties, to the Frankstown fork, taking the courses of the river, is - - - - -		142
From the Juniata forks, across the ridge, to the forks of the Little Conemaugh river,		27
Thence, by the courses of the rivers, to Pittsburg;		
Little Conemaugh, - - -	10	
Big Conemaugh, - - - -	48	
Kiskimenetas, - - - -	25	
Alleghany, - - - -	30	
	——	113
Miles,		——282

No. 60.

JUNIATA CANAL.

This, which comprises sections 2, 3, 4, of the great Pennsylvania contemplated undertaking, whereof section 1 is specified above, will, if the line of route here designated be retained and adopted, make the canal pass across the Alleghany ridge, by the aid of a tunnel of four miles, at 754 feet below the crown, the elevation of which is 2585 feet above tide water; and this being assumed as a summit level, makes about 1075 feet of fall, to be overcome by lockage between the mountain and Pittsburg, taking the Ohio there at 756 feet above tide. For such a canal, the estimate given in is as follows:—

East section, No. 2, - - - - - -	$ 961,548
Mountain section, No, 3, - - - - -	1,086,735
West section, No. 4, - - - - - - -	749,344
	$ 2,797,627

Or, in round numbers, 3,000,000 of dollars, for a canal, taking it to commence at the mouth of the Swatara, and to terminate at Pittsburg.

NOTE.

According to recent intelligence from the Pennsylvania commissioners, it is stated, that the western section of this work, fixed upon to be recommended to the legislature, is as follows; and that drafts and estimates will be prepared accordingly, viz.

From the highest point of navigation on the Juniata, across to the highest point of navigation on the Conemaugh river: this to be, not canal, but a *road*, which can be constructed at a cheap rate, and so laid as not to exceed an angle of one degree with the horizon. Distance, - - - - - - *Miles*,	19¾
From the point last mentioned, that is, from Ben's creek harbour, on the Conemaugh, *a canal*, down to Pittsburg. Distance, - - - - - - -	120
To which add, for the eastern section, from Harrisburg,	130
Total distance, for canal and road together, from Harrisburg to Pittsburg, - - - - *Miles*,	269¾

January 20, 1826.

A bill has been introduced into the Pennsylvania legislature, and will no doubt pass, for the commencement of the "Pennsylvania canal" without further delay; that is to say, for the construction of two sections, very important of themselves, even as independent canals, and essential as parts of the whole line in contemplation: namely, an *eastern section*, from the present extremity of the Union canal at the mouth of the Swatara, to a point of the Susquehanna river, opposite the mouth of Juniata; the distance perhaps 25 miles, and the lockage about 28 feet. A *western section*, extending from Pittsburg to the Kiskimenetas river, length about 30 miles, and lockage 44 feet.

300,000 dollars is the estimate for constructing these sections, and is proposed, by the bill, to be appropriated by the legislature.

The whole great work, including these sections, it is proposed shall be a *State Canal*, to be kept in the hands of the public.

February 3, 1826.

The Pennsylvania commissioners have now reported in full to the governor of the state, with plans and estimates. They report two routes as practicable, between the Susquehanna and Alleghany rivers; viz. the Juniata route, and a northern route; but with regard to the first of these, it does not appear that a supply of water can be relied on for the pass across the dividing mountain, so as to admit of a constant navigable communication; and, in consequence of this, it is suggested to pass the mountain by a *rail road.* The particulars, including estimates, are as follow:—

The Juniata Route:—267 Miles 173 Perches from the Mouth of Juniata.

From the Susquehanna river to the Frankstown branch of Juniata. Rise 582 feet; locks 73; culverts 36; aqueducts 6.

Basin, capable of containing 100 boats, at the junction of the Frankstown and Beaver dam branch,	$ 15,000
Store houses, cranes, &c. - - - - - -	12,000
Carried forward, - - - -	$ 27,000

Brought forward,	$ 27,000
28 miles of rail road, with sidelings and brakes, on the east and west sides of the mountain, communicating with the south fork of Conemaugh,	330,000
Basin at junction of the south fork,	15,000
Store houses, cranes, &c.,	12,000
From the south fork of Conemaugh, to the mouth of Kiskimenetas: fall 653 feet; locks 81; culverts 32; aqueducts 2.	
From the Kiskimenetas to Pittsburg; fall 46 feet; locks 6; culverts 10; aqueducts 2.	
1281 feet, rise and fall.	
160 locks,	800,000
78 culverts,	117,000
10 aqueducts,	40,000
238 miles of canal: width at the top and water line 40 feet; at bottom 28 feet; depth of water four feet; towing path six feet above the bottom: at 6,000 dollars per mile, grubbing included,	1,428,000
	2,769,000
Contingencies, ten per cent.,	276,900
	$ 3,045,900

M.—From Sunbury, 35 miles above the mouth of Juniata, up the Susquehanna, west branch, to a point on its upper waters, whence a navigable communication may be formed with the Alleghany river, and thence down to the Ohio at Pittsburg. Distance, by a mixed navigation of canal and river stream, viz.

By the courses of the west branch, through Northumberland, Lycoming, Centre, and Clearfield counties, to its extreme source in Indiana, at the dividing ridge,	*Miles*	170
Across to the Alleghany river, at or near Kittaning, below the mouth of Mahoning creek,		35
Thence, downward to Pittsburg,		50
	Miles	255

But, according to a report of the Pennsylvania commissioners, this west branch route, taking it to commence from the mouth of Juniata, is by actual measurement 365 miles in length, including 14 miles of rail road, which, should ever this route be adopted, it is recommended to substitute at the pass across the dividing mountain; owing to an apparent scantiness of water for lockage.

The report is dated February 3d, 1826, and the survey is stated as follows:—

From the mouth of the Juniata, to west branch, and up the same to the mouth of Clearfield creek, rise 732 feet.

Thence, up to the Cherry Tree, below the mouth of Cushing creek: rise 283 feet.

14 miles of rail road, from the Cherry Tree to the forks of Two Lick creek.

Down Two Lick to Black Lick, and thence to Newport; fall 261 feet.

Newport to mouth of Kiskimenetas; fall 275 feet.

Thence down to Pittsburg; fall 46 feet.

Rise and fall 1597 feet. Distance, *Miles*, 365

No. 61.

SUSQUEHANNA WEST BRANCH CANAL.

The commissioners of the state of Pennsylvania, are specially required to review this line of route, and cause surveys on it, to ascertain whether it may not have a preference over the Juniata route to the Ohio, last above specified; or whether both may not hereafter be executed with advantage, and be connected one with the other.

From near Blair's Gap, at the Alleghany mountain; where the head waters of the Juniata and the Conemaugh rivers approach; there strikes out a ridge to the heads of the Sinnemahoning branch of the Susquehanna, which may be considered in its extent as the dividing summit between the eastern and western streams. It will be ascertained by the commissioners, through accurate surveys and levels, and measurement of streams, whether any, or what point or points of this ridge, can be advantageously passed, for the purposes of navigation;

and they will compare the circumstances of such passage, or passages, with those of the Juniata summit.

February 3, 1826.

A "northern route," has been reported on by the commissioners, which differs in circumstance from the one by the Juniata summit, in passing the mountain by a continuous navigation, and not by rail road; that is to say, with the aid of a tunnel 482 perches in length, at 140 feet below the ridge; but the distance of this route exceeds the Juniata route by 85 miles. The particulars, including estimate, are as follow:

Northern Route:—

Distance from mouth of Juniata to Pittsburg, 353 miles 11 perches; viz.	
From the mouth of Juniata to Northumberland, rise 86 feet; locks 11; culverts 20; aqueducts 5.	
Up west branch to the Sinnemahoning, rise 277 feet; locks 34; culverts 44; aqueducts 8.	
Up which, to the tunnel, at the head of West creek, rise 896 feet; locks 112; culverts 16; aqueducts 5.	
Tunnel 482 perches in length, and 140 feet below the surface, - - - - - - - - -	$180,000
5 dams and feeder, at the head waters of Toby and of Elk creek, - - - - - - - -	32,000
From tunnel, to the mouth of Clarion river, fall 708 feet; locks 89; culverts 14; aqueducts 5.	
Thence, down the Alleghany to Pittsburg, fall 116 feet; locks 14; culverts 36; aqueducts 8.	
Rise and fall, 2083 feet.	
260 locks, at $5000, - - - - - -	1,300,000
130 culverts, at $1500, - - - - - -	195,000
31 aqueducts, at $4000, - - - - -	124,000
350 miles of canal, at 6000 dollars per mile, grubbing included, - - - - - -	2,100,000
	3,931,000
Contingencies, ten per cent., - - -	393,100
Amount of estimate,	$4,324,100

This route deviates from that by the main sources of west branch, in its taking a more northerly course from the mouth of Sinnemahoning creek to the Alleghany river. It is also shorter, by 12 miles.

* * *

M.—From Pittsburg, by the course of the Alleghany river, through the counties of Alleghany and Armstrong, to French creek, at Franklin in Venango, and up French creek to the mouth of the outlet of Conneaught lake, ten miles below Meadville: from which point, two routes for canals offer, to Lake Erie, of about 48 miles each, to the town of Erie; either of them requiring much lockage, but the supply of water to be had from French creek, it is said, may be ample for a summit level.

Distance from Pittsburg to the French creek ford, - - - - - - -	165
Thence, to Erie town, - - -	48
Miles,	213

No. 62.

LAKE ERIE AND OHIO CANAL.

The Pennsylvania Route.

The commissioners of the state, in conjunction with the engineers of the United States, or at least with the benefit of knowing the results of the latter's examinations along the same ground, or its vicinity, will carry their surveys to the needful extent upon this article; so as to frame a full report for the legislature; which, however, cannot be accomplished before the season of 1826, owing to the other enumerated objects, on which the engineers' and commissioners' attention is engaged.

But, the Alleghany river, in all the distance from Pittsburg to the New-York line, about 240 miles, it is understood, is susceptible of having its bed so thoroughly cleared, and its natural channel so well improved, and in consequence supplied with water, as that a regular uninterrupted navigation, for steam boats of burthen, may be there established, for both the descending and the ascending trade; and that this can be effected at a moderate expense; for, the works proper to accomplish it, are of easy execution.

Should the improvement of the Alleghany channel be thus realized, in its course from the New-York line to Pittsburg, through the counties of Warren, Venango, Armstrong, and part of Alleghany; and through the towns of Warren, Franklin, Lawrenceburg, and Kittaning, in length 240 miles; it will include 140 miles, the distance between Pittsburg and French creek fork at Franklin, out of the 213 miles specified in this article as the projected canal route. Should it, however, be preferred to have a continuous line of canal independent of the river channel, the improvement of the latter must notwithstanding prove to be of very high importance; and it is estimated, that the moderate sum of 400,000 dollars would be sufficient to accomplish a complete navigation for steam boats, on the Alleghany river, between Pittsburg and Warren. Distance 220 miles.

The only *Pennsylvania* canal route between the Ohio and Lake Erie, is from Pittsburg up the Alleghany valley, as far as Franklin at the mouth of French creek, and thence to the town of Erie, as above specified. At Erie, the works now carrying on by the state, and by the United States, will probably render the harbour the best one upon the lake.

◆

A.—From the west bank of the Susquehanna river, opposite Harrisburg, or from such point, as where the proposed acqueduct, towards the Juniata, shall strike the west side of the Susquehanna; by canal, diverging to the Potomac river; suppose through the Cumberland and Conococheague valleys; to the mouth of Conococheague river, at Williamsburg, 94 miles above tide water of the Potomac. Distance, *Miles*, 90

No. 63.

THE CONOCOCHEAGUE CANAL.

This proposed Susquehanna and Potomac connexion, is another object, pointed out to the attention of the Pennsylvania commissioners of survey, and may probably receive it in the season of 1826.

A.—From tide water of the Potomac river, above Georgetown, by canal, along the meandering course of the river, up to Wills' creek at Cumberland, and still upward as far as the mouth of Savage river; whence, by the course of this and Crabtree creek, to the dividing ridge; across which, and taking the valley of Deep creek to the falls, pass, by the ravine of the Youghogany river, through Smithfield, and Connelsville, to the Monongahela river, at 15 miles above Pittsburg. Distance as follows; *Miles*, 360

Eastern Section.

From head of tide water to Great falls,	9
Great falls to Harper's ferry, - -	96
Harper's ferry to Conococheague, -	39
Thence, to Cumberland, - - -	38
Thence, to mouth of Savage river, -	33
Savage river, to summit level, - -	13
Miles,	228

Western Section.

From the dividing ridge, to the Narrows, - - - -	6	
Thence, to falls of Deep creek,	9	
Thence, to Smithfield, - -	24	
Smithfield to Connelsville, -	38	
Thence, to Monongahela river,	40	
Down to Pittsburg, - -	15	132
	Miles,	360

No. 64.

CHESAPEAKE AND OHIO CANAL.

Final surveys of the ground, for this proposed communication with the west, in a line passing through the seat of the general government, are now making by the United States engineers, and commissioners of the states of Virginia and Maryland, appointed thereto; and a report upon all matters in relation to the subject, it is hoped may be made at the next session of congress.

The partial examinations and inquiries, hitherto made, give expectation that this grand and highly interesting project can be carried through: and possibly, in this case, it may be done, with no very great variation from the line of route here designated, although the ridge to be passed across, or through, which is called the Little Backbone, or Little Savage mountain, is 2486 feet above tide water, and 1730 feet above the level of the Ohio river at Pittsburg.

The crown of the ridge has 116 feet of elevation from the bed of Deep creek, at the Narrows; from whence, it has been proposed to commence the cutting. Now, this cutting is, in five and a half, or six miles, to reach the east side of the mountain, and having received the water of Deep creek, will convey it to the eastern descent, conducting to the Potomac waters.

A summit level, therefore, is here proposed, of five and a half, or six miles long, at a depth of 116 feet, where it subtends the highest part of the ridge; and it may be formed, either by an open cut through the whole, or else by an open cut in part, and a tunnel of about a mile and a half, immediately under the crown, which last will probably have the preference.

It is supposed that a good summit level can be obtained at this place, to be amply supplied with water from Deep creek; which is fed chiefly from glades, or mountain meadows of great extent; and these, it is said, send forth water throughout the year.

Estimates of expense, predicated on what is here laid down, have been formed, and submitted, as follow:

The eastern section, 228 miles, comprising 2400 feet of lockage,	$3,342,250
Summit level, for tunnel and excavation,	343,750
The western section, 132 miles, comprising 1600 feet of lockage,	1,880,560
Total,	$5,566,560

But, with regard to this calculation, as the more elaborate surveys of the ground, which are now on foot, may bring new facts and circumstances to light, so there may be occasion to make many alterations in the details of construction, if not in the general plan, or line of route; and to modify accordingly the estimate.

For the execution of the work, a charter, dated 27th January, 1824, was granted by the state of Virginia, to the "Chesapeake and Ohio Canal Company," upon conditions of confirmation on the parts of Maryland and Pennsylvania, and of congress in behalf of Columbia district, as also of the concurrence of the old "Potomac Company," in the provisions of the Act of incorporation.

In conformity to which, the legislature of Maryland passed an Act in January, and congress one in February, 1825; also, the old Potomac company, by a resolution of the stockholders, have, for as much as they are concerned, given in their concurrence. The Pennsylvania legislature have a bill of assent before them, and it most likely will pass.

The capital stock proposed, and authorized by the charter to be subscribed, is 6,000,000 dollars, with power to augment, should the work eventually be found by the company to require it.

The corporate powers are perpetual; and the canal, and all its appurtenances, are, for ever, exempted from taxation.

The house of delegates of the state of Maryland, have passed a vote, appropriating 500,000 dollars, as the state's subscription to the stock, if the work goes into effect.

NOTE.

On the present article, a remark occurs, that is not without interest in canal history. At the tumultuous, and, for this country, (then colonial,) critical period of 1769, the celebrated Richard Henry Lee brought a bill into the Virginia house of burgesses, for the purpose of *opening and improving the navigation of the river Potomac, from tide water up to Fort Cumberland.* The details of which bill have been considered as no less remarkable for a display of statistical knowledge, and economical views in regard to the country, at that early day, than for exemplifying the indefatigable industry, and versatility of a mind, known to be incessantly intent upon furthering the political objects of his country, at the momentous epocha in question. It is, besides, a striking instance, in addition to one already noticed, of the rapidity with which comprehensive ideas, touching a new class of important improvements, adopted in the mother country, could travel across the Atlantic, to be received and adopted here.

◆

A.—From Pittsburg, by canal, ascending by the course of the Big Beaver river, to a summit level, near Warren, in Ohio state; and from thence, descending through the valley of Grand river, to Newmarket or Fairport, on Lake Erie; or, otherwise, descending through the Cayahoga valley, to Cleveland. Distance, from Pittsburg to Cleveland, *Miles*, 154

No. 65.

OHIO AND ERIE CANAL.

This is to be considered as a continuation of the Chesapeake and Ohio canal line, last above inserted; the two canals constituting, together, one grand national project, and they will be decided upon in conformity to such connected reports as shall be made by the United States engineers, now engaged in the examinations.

The summit level here pointed out, which is a small swamp, situate north of Warren, at about 60 miles from Lake Erie, between the sources of the Big Beaver, the Cayahoga, and Grand rivers, and which offers, within a small compass, much variety of route, is 342 feet above the level of the lake, and 218 feet above the level of the Ohio river at the mouth of the Big Beaver, or thereabout.

NOTE.

It is probable, however, that a route different from this, will be reported on by the United States engineers, so as to strike Lake Erie shore more to the east, either in Ohio state, or in Pennsylvania. Four brigades of topographical engineers, and one brigade of civil engineers, have been engaged upon the Chesapeake and Ohio canal and this canal together, and they have completed their labours of surveying. Minute accounts of the whole, with estimates appertaining, are in course of preparation, to be reported to the war department, in the summer of this year, 1826, but not before the rising of congress. The estimates for the whole great project, it is understood, will vastly exceed what has heretofore been supposed.

A.—From Lake Erie, by canal, to the Ohio river, through the state of Ohio; several routes for which seem naturally pointed out; as the following:

By the sources of the Cayahoga river, and the Tuscarawas branch of the Muskingum.

By the sources of Black river, and the Killbuck branch of the Muskingum.

By the sources of the Sandusky and the Scioto rivers.

By the sources of the Maumee and the Great Miami rivers.

All which, having been examined, and the circumstances separately and connectedly considered, a compound canal, upon a broad scale; or, rather, a plurality of canals and feeders, has been adopted; so as to comprehend a great proportion of all the navigable distance specified above. Distance, according to surveyors' report, exclusive of feeding canals, *Miles*, 572

No. 66.

OHIO STATE CANAL.

This is an enterprise of the state, entered upon by the government, after due consideration, and a course of surveys made of the ground, by their commissioners and engineers.

The plan is comprehensive, and nothing now is wanting, save a series of circumstances to favour the execution of it in the same spirit as that in which it is gone into: if which should take place, we may behold, not the prospect merely, but the actual and sudden creation, of a very great increase of prosperity to this section of the country.

To meet the expense, in the meantime, it is proposed to have recourse to the loan system; and a fund of 400,000 dollars, raised against an issue of state stock, bearing an interest of five per cent. per annum, answers to the present year's occasions, 1825.

Other loans will take place from year to year, to defray the expense, as the work proceeds: and to pay the annual interest of the sums so borrowed, as well as to secure the redemption of the debt, a state land tax is to be assessed, until such time as the improvements, having become productive, shall supersede its continuance.

On the part of the general government, there stands assigned 100,000 acres of the public land, in aid of the object.

Portions of both the Muskingum and the Scioto river valleys are to be included in one great canal, as now it is decided on, and the work begun: another great canal, which is also commenced, takes within it the Miami river, and a portion of the Maumee, terminating below the rapids thereof, near Lake Erie; so that the improvements commence from a point as near to the eastern extremity of the state, on the Erie shore, as has been thought advisable, with reference to securing a good harbour at the lake, and a summit with plenty of water, that is to say, at Cleveland, or mouth of the Cayahoga river, and the line, in its progress, strikes diagonally; and again, beginning at the south-west angle of the state, and taking a direction northward, from the Ohio river at Cincinnati, the improvements will here embrace the whole of the western border.

The plan, and estimates of the engineers, are given in, as follows:

Route by the Tuscarawas, and the Cayahoga.

No. 1. From the mouth of Scioto river, to Cochocton,	*Miles,* 176	23
No. 2. From Cochocton, to Old Portage bridge,	92	2
No. 3. From Old Portage bridge, to Lake Erie level, at Cayahoga,	38	23
Length of the main line,	*Miles,* 306	48
Length of Columbus and Raccoon fork feeders,	15	45
Canal and feeders,	*Miles,* 322	13

No. 1. Expense of construction,	$1,675,240
No. 2. Do. do.	610,563
No. 3. Do. do.	446,033
Additional, at the feeders and harbour,	69,873
Total expense of canal and feeders,	$2,801,709

Amount of lockage, 1185 feet.

Route by the Great Miami and the Maumee.

From the Ohio river, at Cincinnati, to the Loramies summit,	*Miles,* 145	66
From the summit, to the foot of Lower rapids of Maumee,	119	56
Length of main line,	*Miles,* 265	42
Length of feeders, from the Miami and Mud rivers,	25	20
Canal and feeders,	*Miles,* 290	62

Amount of lockage.

South of summit,	*Feet,* 511
North of do.	378
	Feet, 889

Expense of construction.

From the Ohio, to the crossing of Mud river, near to Dayton, - - - - - - -	$566,837
From the crossing of Mud river, to the south end of the Loramies summit, - - - -	846,973
From the south end of summit, to the crossing of the Maumee, below Fort Defiance, - - -	682,309
From the crossing of Maumee, to the foot of Lower rapids, - - - - - - -	406,375
Main line, - - - - - - -	$2,502,494
Feeders, - - - - - - - -	427,463
Canal and feeders, - - - - - -	$2,929,957

Total expense, for the whole on both routes, 5,731,666 dollars.

It is calculated, that the line first specified above, from Cleveland to Cochocton, and to the Licking summit, near Columbus, and thence to the mouth of the Scioto river, on the Ohio; together with so much of the other line as reaches from Cincinnati to Dayton, will all be finished in the year 1831.

NOTE.

At Cleveland, on account of an obstruction at the mouth of the harbour, occasioned by sand thrown up by the waves, a remedy is proposed, by erecting a pier, to extend 1056 feet in length, from the shore into the lake.

The commissioners have been authorized by the Ohio legislature, to make surveys for the purpose of ascertaining as to the practicability of a canal from the mouth of Little Beaver, on the Ohio river, to a point of the main canal at Tuscarawas, at or near the mouth of Sandy creek, and near the line which divides Stark and Tuscarawas counties. This would at once connect Pittsburg and Lake Erie.

Besides which, there is to be a convention of delegates from the counties of Portage and Trumbull, in Ohio state, and of Beaver, Butler, Mercer, and Alleghany, in Pennsylvania, to be held soon; in order to adopt measures for ascertaining as to the practicability of carrying a canal direct from Pittsburg to the said Ohio canal, at the Portage summit, the centre of which summit is at the south-west angle of Portage county: and it extends five miles along the banks of the Tuscarawas, and five miles across the portage, to Cayahoga river.

In regard to the Miami valley canal, it will be so abundantly supplied with water from its two sources; the Mud river above Dayton, and the Miami river at Middletown; that the commissioners anticipate very extensive establishments of hydraulic works, through them, at Cincinnati. They calculate on water sufficient for 60 pairs, at least, of four and a half feet mill-stones, to be kept in constant operation, without at all injuring the banks of the canal, or impairing the mill privileges on the Miami river.

SUMMARY FOR NEW-JERSEY, DELAWARE, MARYLAND, PENNSYLVANIA, AND OHIO STATES.

Natural Navigation, - - - - -	*Miles*, 340
Artificial Navigation, - - - - - -	2393
Mixed Navigation, - - - - - - - -	1078

To which, add as follows:

IN NEW-JERSEY STATE.

The Hackinsack river, rises in New-York, and passes, by a southern course, into Newark bay. It is navigable 15 miles, - - - - - - - - 15

Great and Little Egg Harbour rivers, rise in Gloucester and Burlington counties, and fall into Great and Little Egg Harbour bays, on the Atlantic coast. They are navigable, together, 100 miles, - - - - 100

Other small rivers and creeks, and the bays and sounds into which they discharge, on the east of the state, between Sandy Hook and Cape May, - -

Maurice river, rises in Salem, and runs through Cumberland county into Delaware bay. It is navigable 30 miles, - - - - - - - - - 30

Cohanzy river, runs also through Cumberland county, into the bay, and is navigable 25 miles. - - - 25

Creeks, tributary to the river Delaware, on the west border of New-Jersey, from the bay upwards, - -

IN DELAWARE STATE; VIZ.

Christiana creek, runs from Pennsylvania, into the north of the state, and after being joined by the Brandywine, falls into the Delaware river. It is navigable 13 miles, - - - - - - - - 13

Creeks, falling into the Delaware river and bay, between the Christiana and Cape Henlopen. - - -

Nanticoke river, flows south-westwardly, through this state, into Maryland, - - - - - -

IN MARYLAND STATE; VIZ.

The Elk, the Sassafras, the Chester, the Choptank, the Nanticoke, the Wycomico, the Pocomoke, and other streams, tributary to Chesapeake bay, from the Eastern Shore, - - - - - - - - -

The Patuxent river, rises west of Baltimore, and falls into the Chesapeake, between Drum and Cedar points. It is navigable 60 miles, - - - - - - 60

The Severn, the Patapsco, and other short streams and bays, on the west of the Chesapeake, - - -

Rivers and creeks, tributary to the Potomac, on the east and the north-east, - - - - - -

IN PENNSYLVANIA; VIZ.

Confluents of the Delaware river, from the west and north-west; they are many, but streams of inferior magnitude in general, except those already noticed, - -

Confluents of the Susquehanna; from Tioga point to Sunbury, the Towanda, the Wyalusing, the Tunkannock, the Lackawannock, Fishing creek, and some others, are mountain streams of short natural navigation, - -

West branch, Susquehanna, receives some considerable streams, as the Sinnemahoning, the Bald Eagle, Pine creek, Lycoming, the Loyalsock, and others; partly navigable, - - - - - - -

The Juniata branch, receives the Frankstown, which is considerable, and many streams of limited navigation, - - - - - - - - - -

Creeks, falling in below the mouth of Juniata, -

The Pennsylvania confluents of the Potomac river; these are not considerable, - - - - - -

Confluents of the Alleghany river; these are very considerable, as the Kiskimenetas, French creek, Clarion river, Red Bank, Mahoning, and others; affording much natural navigation, - - - - - - -

Confluents of the Monongahela river, in Pennsylvania; the Youghogany, and some minor streams, -

IN OHIO STATE; VIZ.

The Great Miami river, navigable to Dayton, in Montgomery county, - - - - - - 75

Its confluents; the White water, South-west branch, Mud river, and others, - - - - - - -

Little Miami river, meanders 100 miles, between its main source, in Green county, and its mouth at six miles above Cincinnati, on the Ohio: it is precipitous, but receives a branch from the east, and several small streams, partly navigable, - - - - - -

Scioto river, navigable up to Columbus, where it receives the Whetstone river, - - - - - 120

Other confluents of the Scioto; the Big Belly, the Walnut, the Alum, the Darby, the Deer, the Paint, the Salt, - - - - - - - - - -

The Hockhocking river, rises in Fairfield county, and is navigable 70 miles from its mouth, at Troy, - - 70

Whitewoman's river, formed by the junction of the Owl and the Mohegan, unites with Killbuck creek, at five miles above Cochocton, and forms that branch of the Muskingum, - - - - - - - -

Tuscarawas river; by this and the Whitewoman's uniting, at Cochocton, the Muskingum river is formed,

The Muskingum, is navigable from its mouth, at Marietta, up to Cochocton; a natural obstruction, at Zanesville, having been overcome by a lock improvement at that place,	120
The principal tributaries of the Muskingum, are navigable at high water, each 40 or 50 miles,	
Big Beaver river, has its source in this state, partly; its mouth in Pennsylvania,	
The Sandusky river and bay, the Huron, the Vermillion, the Black, the Rocky, the Cayahoga, the Chagrine, the Grand, the Ashtabula; these discharge into Lake Erie,	
Miles,	4439
Unascertained, *Miles*,	. . . .

PORT AND CITY OF PHILADELPHIA.

As a companion to the note inserted, upon the active state of ship-building in the port of New-York, this note serves to record, that, in the ship-yards on the Delaware, there are at this time constructing, more than 10,500 tons of shipping, which includes a man of war of the largest size.

But the City is not without some incidents of still higher import, to furnish the subject of a *note:* one of them is, that we find notices published in the newspapers of the day, of about 50 courses of scientific lectures, proposed to be delivered in the city, in the approaching winter; including nine courses at the university. They include; anatomy, surgery, materia medica, midwifery, institutes of medicine, medical practice, chemistry, pharmacy, physiology, natural philosophy, mineralogy, botany, natural history, mechanics, astronomy, law, history, elocution.

Besides the University of Pennsylvania, as of old, the city now is in possession of other institutions, who have their standing professors, and lecturers on science and the arts.

VIRGINIA NAVIGATION.

N.—From Washington city, down the Potomac river, and down Chesapeake bay, to Hampton roads; thence up James river, to Bermuda hundred, or City Point; thus far there being a passage for ships; and thence, 20 miles up to Richmond, a sloop navigation.

Distance from Washington, *Miles*, 310

◆

M.—From City Point, on James river, up the Appomatox, 10 miles to Fisher's bar, above Broadways, and thence, by canal, round the falls, to five or six miles above Petersburg; from whence, up the river channel improved, to Farmville, in Prince Edward county.

Distance, by the meanders, *Miles*, 110

No. 67.

THE APPOMATOX CANAL.

These useful works were, long since, executed by the Appomatox Company, of Virginia: they have, by canal and otherwise, laid open the navigation to the distance specified.

◆

M.—From the foot of Richmond falls, by independent canal, or by canal combined with the river channel improvements, effected and to be effected, upwards to a point suitable for a connexion with the Great Kanhaway, and through that river with the Ohio. Distance, as follows: *Miles*, 508

Viz.

To the mouth of Craig's creek, in Alleghany county,	200	
Up Craig's creek,	49	
Thence to Sinking creek, west of the dividing ridge,	9	
Down which, to the Great Kanhaway,	34	
Down Kanhaway, to the mouth of the Greenbrier,	55	
Thence to Bowyer's ferry,	46	
To the foot of Great falls,	21	
To the Ohio river, at Point Pleasant, the mouth of the Kanhaway,	94	
Miles,	——	508

Another proposed route, is by the river Greenbrier, viz.

Up to the mouth of Craig's creek,	200
Still up James river, to the mouth of Dunlap's creek, above that of Jackson's river,	25
Thence, across to the mouth of Howard's creek, on the Greenbrier, in Greenbrier county,	28
Down Greenbrier, to its mouth, on the Great Kanhaway,	50
Down Kanhaway, to the Ohio river,	161
Miles,	464

No. 68.

JAMES RIVER AND KANHAWAY CANAL.

The grand project for a junction of these two rivers, by canal, has long been a subject of consideration and interest, and a successful completion of the more northerly water communication between the east and the west, when that shall once have taken place, may possibly lead to this also. The improvement of the natural navigation, and incidental works, that have been gone into, and are now far advanced, along both these great river courses, up to a certain point of each; together with a well constructed road, facilitating the transit of commodities by land, over the space between those points, will, in the meantime, have consequences highly beneficial, as is perfectly well understood.

The board of public works, in 1820, recommended to the general assembly of Virginia, the following plan; viz.

1. An independent canal from the basin at Richmond, up the valley of James river, and its branch, Jackson's river, to the mouth of Dunlap's creek; a distance of 225 miles.
2. A good road from the mouth of Dunlap's creek, across the Alleghany mountains, to the Kanhaway river, just below Great falls; a distance of 90 miles.
3. From the foot of Great falls, to Point Pleasant, on the Ohio, at the mouth of Kanhaway; along this distance, 94 miles, the river bed to be made navigable by locks, and dams, &c. &c.

The whole distance, from Richmond to Point Pleasant, on this route, being therefore 409 miles. Estimate for the independent canal, 1,799,766 dollars; for the road, 100,000 dollars; for the improvements in the channel of the Kanhaway river, 45,650 dollars.

Some part of the independent canal is now finished; and there can be but little doubt the whole will be satisfactorily accomplished in the course of a few years.

It is not improbable that a railroad will be brought into the service.

With regard to the two lines of route here laid down for a thorough canal; by the first of them, the lowest point of the ridge to pass through, is 2551 feet in altitude above tide water in James river, and 2070 feet above the Ohio river level at the mouth of the Great Kanhaway: it is 53 feet above the highest spring on the east, 42 feet above the highest on the west.

The other proposed route is shorter, and has a summit of somewhat less elevation; viz. 2478 feet above tide level. It is this route which was selected for carrying a road across the mountainous part, as above stated. The mouth of Dunlap's creek was ascertained to be 1238 feet above tide level at Richmond, and 649 above the foot of Great falls in Kanhaway. From the foot of Great falls to the mouth of Kanhaway, the river level descends 108 feet.

The improvements made up the stream of James river, are these:—the river is navigable for vessels of 125 tons, to Rockets, a little below Richmond. At the city there are 12 locks, overcoming an ascent of 80 feet, and connecting the tide water with a basin on Shockoehill. From this basin proceeds a canal of 25 feet wide, and three feet deep, for two miles and a half, which then enters the stream. At three miles farther, there are three locks, overcoming an ascent of 34 feet, and a short canal which leads to Westham, at the upper end of Great falls. Above this, the James River Company, many years ago, removed all obstacles to the passing of boats drawing 12 inches of water, for a distance of 230 miles.

◆

M.—From a point on the Potomac river, in Berkeley, or Jefferson county, along the Shenandoah valley, through the counties of Frederick, Shenandoah, Rockingham, and Augusta; by canal and river improvements; to the Lexington branch of James river, in Rockbridge county. Distance, by the meanders, *Miles*, 300

No. 69.

THE SHENANDOAH CANAL.

Should the Chesapeake and Ohio canal communication, by the Potomac, be realized, as it is hoped, there will, at some period not very remote, be another efficient communication attempted, through the central counties of Virginia, from the

Potomac to the waters of James river. It is the one here specified, through the Shenandoah valley, by which the most fertile district of all the state will be immeasurably benefited, in the facility of transporting its produce. The river has long since been made navigable for boats up to Port Republic, in Augusta, about 200 miles from its mouth; near which place, a fall of 50 feet was overcome by six short canals with stone locks.

SUMMARY FOR VIRGINIA.

NATURAL NAVIGATION,	*Miles*, 310
MIXED NAVIGATION,	918

To which, add as follows: viz.

Rappahanock river, rises in the Blue Ridge; its general course south-east, to the Chesapeake bay. It is navigable up to Fredericksburg,	110
York river, is formed by the junction of the Mattapony and the Pamunky; which rise in the mountains, and unite at Delawar town. Pursuing a course between the Potomac and Rappahanock rivers, to Chesapeake bay, it is navigable by both branches, and the main, together,	250
Pianketank, and other minor tributaries of the Chesapeake, from the west,	

Tributaries of the Potomac: viz.

The South branch, rises by numerous creeks, in Pendleton county, and joins the main Potomac, at Cumberland. It is navigable 150 miles,	150
The Shenandoah, rises by several forks in Augusta county, and is augmented by many streams, in its course to Frederick county; where it receives a north branch, and whence it pursues a north-east course to the Poto-	

mac, at Harper's ferry. It has been noticed, relative to a canal, - - - - - - - - -

Tributaries of James river; the Chickahominy, the Rivanna, the Fluvanna, and many minor streams, discharging from the north; the Nansemond, and others from the south and the south-west, - - - -

The upper waters of the Roanoke, and Staunton rivers, and their tributaries the Smiths rivers, Goose creek, Big and Little Otter, Big and Falling Cub, Little Roanoke, Banister, - - - - - - -

Big Sandy river, Little Kanhaway, Greenbrier, and other tributaries of the Ohio, in Virginia: these afford considerable navigation, - - - - - -

Miles, 1738
Unascertained, *Miles*, ...

INDIANA NAVIGATION.

M.—From the south-west extremity of Lake Erie; or from that point up the Maumee river, which may be struck by the Ohio state canal works; by the course of the Maumee and Wabash rivers, to the confluence of the latter with the Ohio, at Shawnee town, in Gallatin county, Illinois; this line of route cutting the north-west angle of Ohio state, and passing through the state of Indiana. Distance, by canal and river navigation combined, *Miles*, 600

No. 70.

LAKE ERIE AND OHIO; *via* WABASH RIVER.

This communication has long been projected; and the proper examinations are now on foot. The upper waters of the two rivers approach to within a few miles, at the Maumee village, or Fort Wayne. The Wabash, in its course, will probably, with some works of improvement, afford a steam boat navigation of between 400 and 500 miles, and the Maumee nearly 100 miles, exclusive of the Ohio state canal works; so that it is thought the principal or connecting canal, may not require to be so much as 50 miles in length. The legislature have appointed a committee of survey upon the subject. On the part of the general government, there is, by law, an assignment of 100,000 acres of the public lands towards the execution of the project, whenever it shall be gone into.

NOTE.

Since the above was written, application has been made to congress, by the state of Indiana, for a grant of three sections in width of the public lands on each side of this contemplated canal; in order to further the execution of the work, by the state. It will probably be complied with.

To this Mixed Navigation, - - -	*Miles*, 600
Add, as follows:	
White river, the main stream of which falls into the Wabash, 30 miles below Vincennes, watering the country to a vast extent, by its branches and sub-branches. The northern branch rises in the heart of the state, by a number of creeks, and is in length 150 miles; the eastern branch 150 miles, - - - - -	
The Petoka river, falls into the Wabash, four miles south of White river, after meandering about 100 miles,	
These, and some other tributaries of the Wabash river, afford together a natural navigation of more than	500
Whitewoman's river, a considerable stream of the south-east of the state, flowing into the Great Miami,	
Other streams intersect the land in all directions, and some, having their courses within the Indian possessions, are as yet imperfectly explored, - - -	
	Miles, 1100
	Unascertained, *Miles*, ...

OHIO RIVER AND KENTUCKY NAVIGATION.

N.—From Pittsburg, in Pennsylvania, down the Ohio river, to Louisville, in Kentucky, above the rapids; and from the foot of the rapids, down to its junction with the Mississippi, at Cairo, in Illinois, above Fort Jefferson. Distance, taken by stations, *Miles*, 945

◆

A.—From Louisville, on the Ohio, by canal, to a point of the river below the rapids. Distance, *Miles*, 3

No. 71.

LOUISVILLE CANAL.

An Act was passed, and a sum voted by congress, in 1824, for a removal of the obstructions to the navigation of the Ohio and Mississippi rivers; examinations being directed to be gone into, to ascertain the best means to be used for a complete and thorough improvement of the same, and to adopt those means. The which is now in a course of execution, superintended by officers of the United States corps of engineers: and one of the consequences of the measure has been, to accelerate the undertaking of the long-projected Louisville canal, so as to ensure its early accomplishment.

A company is chartered as the "Louisville and Portland Canal Company," and the work is in hand. A favourable subscription to the company's stock has taken place, and engineers are appointed, and it is believed that the expense of this very desirable improvement will not exceed the sum of 500,000 dollars, including two capacious docks. The dimensions of this canal will be on a scale to pass large vessels; viz. 68 feet in width, 16 feet deep: and it is expected the work may be complete in the year 1827.

There is a bill before congress, for a subscription of the United States, to the amount of 100,000 dollars, in the company's stock.

To this Natural Navigation,	*Miles*, 945
Artificial Navigation,	3
Add, as follows:	
The Cumberland river, which falls into the Ohio, 60 miles above the mouth of the latter, and which is navigable 500 miles; whereof the upper and lower sections lie within the state of Kentucky, a distance of	200
Green river, rises in the centre of the state, in Lincoln and Mercer counties, and discharges into the Ohio, near Evansville, Indiana. It is navigable,	150
Salt river, which falls into the Ohio, 30 miles above Louisville, is navigable for boats,	60
Kentucky river, rises in the south-east angle of the state, and falls into the Ohio at Port William. Navigable,	130
Licking river, rises between the sources of the Kentucky and Big Sandy rivers, and falls into the Ohio at Newport, opposite Cincinnati. It is navigable,	70
Big Sandy river, has its sources in Cumberland mountains; they interlock with those of the Licking, the Cumberland, and other rivers, and this stream, which forms the eastern boundary of the state, falls into the Ohio at Catletsburg,	
Of these several rivers, the branches and their substreams are very numerous, pervading every part of the state, and supplying a great extent of natural navigation,	
	Miles, 1558
Unascertained, *Miles*,	....

THE MIDDLE GREAT LAKES, AND THE STATES OF ILLINOIS AND MICHIGAN NAVIGATION.

N.—From Buffalo, on Lake Erie, by the lake, to its extremity west, at the Maumee bay. Distance, by stations on the coast. *Miles*, 350

◆

A.—From the west of Lake Erie, or from the Maumee bay or river, by canal, across westward, to the south, or the south-eastern extremity of Lake Michigan. Distance, *Miles*, 150

No. 72.

THE ERIE AND MICHIGAN CANAL.

This projected canal will become hereafter no unimportant link in the chain of general water communication. As yet, no precise surveys and levelling have been gone into; but, from what is asserted of the capacity of the intermediate water courses, a junction of the lake waters this way, would appear to be quite practicable. A line of route has been suggested, by the head waters of the two St. Josephs: a part of it lying in the, as yet, Indian country.

The St. Joseph's river of Michigan, which discharges into that lake near its southern extremity, is stated as being navigable, for boats of three feet water, to the distance of 130 miles from its mouth, free from rapids, or obstruction of any kind.

N.—From Maumee bay, across Lake Erie, up Detroit river, to Lake St. Clair, across which, and up St. Clair river, to Fort Gratiot; whence, up Lake Huron to Michilimakinac, and thence through Lake Michigan to the south-western extremity thereof, near Fort Dearborn, or the mouth of Chicago river. Distance, by stations, or the indentations of the coast, as follows;

Maumee bay to		
The mouth of Raisin, - -		35
Mouth of Detroit river, - -	15	50
Detroit city, - - - -	21	71
Peach island, - - - -	6	77
Gross island, - - - -	3	80
Huron of St. Clair, - - -	15	95
St. Clair river, - - -	8	103
Belle river, - - - -	18	121
Delude river, - - - -	9	130
Fort Gratiot, - - - -	2	132
White rock, - - - -	55	187
Elm creek, - - - -	10	197
Black river, - - - -	12	209
Pointe aux barques, - -	12	221
Pointe aux chesnes, - -	18	239
Shawangunk island, - -	11	250
Sable river, - - - -	30	280
Thunderbolt island, - -	40	320
Flat-rock point, - - -	18	338
Presqu' isle, - - - -	20	358
Blancbois isle, - - -	60	418
Michilimakinac, - - -	12	430
Chicago river mouth, - -	350	*Miles*, 780

A.—From Lake Michigan at Fort Dearborn, or from Chicago river, at or near the mouth thereof, by canal, to a point on the Illinois, below obstructions; which may be attained at the confluence of the latter with the river Vermillion. Distance, *Miles*, 120

No. 73.

CHICAGO CANAL.

The route for this canal has been examined by commissioners of the state of Illinois, and a report on the subject been by them rendered to the legislature; but nothing of the canal itself is yet done. The work will probably be gone into as soon as there shall be a certain further advance made in improvements at other points. A company is incorporated by the state, as the "Illinois and Michigan Association:" their capital 1,000,000 dollars, with a reserve in the law, that, after 50 years from the completion of this canal, the state may become the proprietor thereof, on refunding to the company the whole cost, and six per cent. per annum interest. The commissioners' report states the surface level of Lake Michigan to be about 158 feet above the surface level of Illinois river, at the mouth of the Little Vermillion, which is contemplated for the point of connexion; and the engineers' estimate of cost, is about 7000 dollars average per mile; making for 100 miles, 700,000 dollars, or for 120 miles, 840,000 dollars. Towards the object, there is a grant by the United states, of 100,000 acres of land, besides the space through which the canal will run, and 90 feet on each side of it.

Below the lower rapids, near the mouth of Vermillion river, the current of the Illinois is deep and gentle, and the navigation unobstructed through the year.

N.—From the mouth of the Vermillion river, down the Illinois, to the confluence of this with the Mississippi, near the town of Monroe, in Illinois state, and 30 miles above St. Louis, Missouri. Distance, by the river course, ... *Miles*, 250

SUMMARY FOR THE MIDDLE GREAT LAKES, AND THE STATES OF MICHIGAN AND ILLINOIS.

NATURAL NAVIGATION, - - - - *Miles*, 1380
ARTIFICIAL NAVIGATION, - - - - - 270

To which, add as follows:

IN MICHIGAN STATE; VIZ.

The Raisin river, after a course of about 100 miles, falls into Lake Erie, below Monroe town, - - -

The Huron of Lake Erie, rises by several branches, and flows parallel to the Raisin: it discharges at the outlet of Detroit river, - - - - - -

The Huron of St. Clair; north of the above; rises, like them, in the dividing ridge, and flows through a lake: it receives in its course a number of streams, and falls into Lake St. Clair, - - - - - -

Saganaw river and bay, of Lake Huron, and Ottoway river and bay, of Michigan: these each include a considerable extent of coast, - - - - - -

Carp river, Platte river, the Betsy, the Manistic, the Sandy, the Marquette, the Pentwater, the White, the Mascogon, the Grande, the Iroquois, the Kikolanozo, the Blackwater, and the St. Joseph's rivers, are tributary streams to the Michigan lake on the east, - - -

Tongnamon river, the Sheldrake, the Twohearted, the Hurricane, the Miners, the Trains, the Laughing Fish, and the Chocolate, are tributaries of Lake Superior, in this state, - - - - - - -

IN ILLINOIS STATE; VIZ.

Tributaries of the Illinois; the Spoon and Crooked rivers, rising in the west of the state, and after a course of 80 to 100 miles each, falling into the Illinois; which also receives, on the east bank, a number of smaller streams, - - - - - - - - -

Henderson river, rises in the same ridge with the Spoon. This, as well as several rivers and creeks not here named, enters the Mississippi at the west line of the state, - - - - - - - - -

The Kaskaskias river, rises in the prairies between the Illinois and the Wabash: it falls into the Mississippi, midway between the Ohio and the Illinois: it is 150 miles and more in length, and navigable for boats 130, 130

The Cahokia river, falls into the Mississippi four miles below St. Louis; navigable not far, - - -

Vaseuse, or Muddy river, falls into the Mississippi above Cape Giraudeau, - - - - - -

Saline river, falls into the Ohio, 20 miles below the Wabash: navigable to some miles above the salt-works,

The Little Wabash, and other streams falling into the Wabash, afford natural navigation, more or less, each. The waters lying within the Indian possessions of this state, are not yet fully explored, - - - -

Miles, 1780
Unascertained, *Miles*, ...

NOTE.

The privilege of being stiled "state," in regard to Michigan, has, above, been anticipated. It will very soon be acquired.

LAKES ONTARIO AND SUPERIOR, AND NORTH-WEST TERRITORY NAVIGATION.

N.—From the point on the St. Lawrence river, struck by the contemplated "Champlain and St. Lawrence canal," of New-York, up the said river, to Sackett's harbour, Lake Ontario, and thence up the Lake, to Fort Niagara and Lewistown, on the Niagara strait. Distance, as follows:

St. Regis, lat. 45°, to		
Hamilton,		35
Great Gallop islands	10	45
Ogdensburg,	14	59
Morrisville,	12	71
Cape Vincent,	50	121
Sackett's harbour,	20	141
Oswego river,	40	181
Great Sodus bay,	28	209
Genessee river,	35	244
Fort Niagara,	74	318
Lewistown,	7	*Miles*, 325

N. 648. } From Michilimakinac, through Lake Superior,
A. 1. } to the western extremity thereof, at Fond du Lac, and thence up St. Louis' river, to the establishment of the "American Fur Company." Distance, by stations, viz.

To Detour,		40
Sault St. Marie,	45	85
Pointe aux Pins,	6	91
Pointe Irroquoise,	9	100
Tonguamanon bay,	15	115
Sheldrake river,	9	124
White Fish Point,	9	133
Two-hearted river,	24	157
Grande Marais,	21	178
Pointe Grand Sable,	9	187
Picture rocks,	12	199
Doric rock,	6	205
Grand isle,	12	217
Train's river,	9	226
Train's island,	3	229
Laughing Fish island, (river,)	6	235
Chocolate river,	15	250
Dead river,	6	256
Grand point,	6	262
Garlick river,	9	271
St. John's river,	15	286
Burned river,	12	298
Pine river,	6	304
Huron river,	9	313
Around Keweena point,	90	403
Little Trout river,	9	412
Graverod river,	6	418
Misery river,	12	430
Fire-steel river,	18	448
Onontagon, or Coppermine river,	6	454
Iron river,	15	469
Carp river,	15	484
Presqu' isle river,	6	490
Blake river,	6	496
Montreal river,	21	517

Bad river, - - - -	12	529
Chegomigon point, - -	6	535
Isle St. Michael, - - -	3	538
Raspberry river, - - -	15	553
Sandy river, - - -	6	559
Detour, - - - -	3	562
Cranberry creek, - - -	30	592
Fond du Lac, (Boisbrulé river,)	15	607
Fond du Lac, - - -	21	628
Chippeway village, - -	3	631
Fur company's establishment,	18	*Miles*, 649

No. 74.

ST. MARY'S CANAL.

The navigation between the lakes Huron and Superior, especially upward, is interrupted by the falls of St. Mary, but the distance is short; and it is stated that a side canal at this place, which would render the navigation continuous, need not be near a mile in length, and would not be at all of difficult construction.

N.—From the head of Noguet's bay, Michigan, through that and Green bay, to Fort Brown, at the mouth of Fox river. Distance, *Miles*, 90

A.—From Fort Brown, at Green bay, Michigan, by canal, in the direction of Fox river, upward, and along a series of rapids between the mouth thereof and Winnebago lake. Distance, *Miles*, 50

N.—From the extremity of this canal, at the outlet of Winnebago lake, through the said lake, and up Fox river channel, to its fork; whence, by the main south branch 15 miles, to a portage. Distance, *Miles*, 190

A.—From the point on Fox river, last above specified, by canal, westward, to the opposite water of the Ouisconsin river. Distance, *Miles*, 2

No. 75.

THE FOX AND OUISCONSIN CANAL.

The ground for the location and particulars of this projected work, has yet to be more minutely examined than it has hitherto been, with a view to the undertaking: but effective attention will no doubt be drawn to the object; if not forthwith, within the course of a very few years, as the territory becomes more dense in population.

N.—From the termination of the canal at the Ouisconsin river, down the river stream, to the mouth thereof at Prairie des Chiens, Fort Crawford, on the Mississippi. Distance, *Miles*, 182

SUMMARY FOR LAKES ONTARIO AND SUPERIOR, AND THE NORTH-WEST TERRITORY.

NATURAL NAVIGATION, - - - -	*Miles*, 1435
ARTIFICIAL NAVIGATION, - - - - - -	53

To which, add as follows:

The Coppermine river, the Montreal river, and many streams of less note on the south shore of Lake Superior. The first two are each connected, through a short portage, with the Ouisconsin river, north branch, -

The St. Croix river, formed of several branches rising in the northern swamps: it expands into a lake near the Mississippi, and discharges at 50 miles below St. Anthony's; the Chippeway, the Black, and some lesser streams which discharge into the same, farther south, - - - - - - - - - -

Miles, 1488

Unascertained, *Miles*, ...

NOTE.

Upon Lake Superior, and within the United States section of it, there are several islands reputed for being very productive in copper ore. The late Dr. Franklin related, that when resident in Paris, he was favoured with the perusal of a set of unpublished journals and maps of a corps of French engineers; who had sloops, and visited and examined those islands, when the French had possession of Canada; and that, according to their account, the quantity of copper ore was inexhaustible.

MISSISSIPPI NAVIGATION; AND CONFLUENTS FROM THE WEST.

N.—From Fort St. Peters, below the Falls of St. Anthony on the Mississippi, latitude 45°, down the river stream, to the mouth thereof, at the Balize, in the Gulf of Mexico. Distance, by stations, on the windings of the river. *Miles*, 2250

No. 76.

MISSISSIPPI RIVER-BED.

This navigation, through the natural channel of the river, from the rapids at St. Anthony, down to the sea; although it may be considered as open and unimpeded in all the distance, yet contains some hidden dangers, which now and then occasion serious accidents to vessels on their passage. These consist in sunken trees, brought down by the floods; some kept in motion by the current, others immovable; and are denominated "Planters," or "Sawyers," or "Snags," according to their respective position and circumstance to occasion damage, or the manner in which they happen to have partially imbedded themselves beneath the water.

To clear away a few of these dangers from along this great highway of the country, at places where they can be discovered, an appropriation was made by congress last year, 1824, and the work is at present in prosecution. The sum voted was 70,000 dollars, the river Ohio being included in it for the like improvement along its channel, where similar dangerous obstructions exist; and contracts, passed to individuals by the commissioners of government, for certain distances of the one and the other, are now in execution. Further appropriations for the object, will no doubt be required, and made.

To this, - - - - - - - *Miles* 2250

Add as follows:— - - - - - - -

Above the Falls of St. Anthony, the Mississippi river receives from the west; the Corbeau, the Pine, the Elk, the Sac, and some other streams; the Corbeau is navigable about 200 miles. - - - - - -

The St. Peter's river, enters the Mississippi at the United States fort below the Falls of St. Anthony; it has been ascended: its extreme sources approach and interlock with those of the north Red river; it receives in its course a number of streams, and affords a passage for canoes, or in flood season for boats, of about 500 miles, interrupted by two short portages. This navigation is susceptible of improvement. - - - -

The Oceano, the Joway, the Turkey, the Moines, besides other rivers falling into the Mississippi below the mouth of St. Peter's river, and above that of the Missouri, afford together a navigation to an unascertained extent, especially in the season of flood. The Moines has a course south-east, of 800 miles, and receives the contribution of two great branches; the Raccoon, and the North fork; together, - - - - 1500

The Missouri river, from its mouth near St. Louis, is navigable up to the great falls, 2532 miles, and above the falls to its sources, 500 miles in addition, - - 3032

The Merrimeg, and its branch the Big river, navigable; - - - - - - - - - 200

The St. Francis river, flows from the Highlands, and receives Bear creek, the White Water, and various other streams; it passes in a south course of 450 miles, through an immense swamp, towards the Mississippi, which receives it at 40 miles below the Chickasaw Bluffs. The lowermost part of this river is choked by a large stationary raft, - - - - - - - -

The White river, is derived from a number of sources in the Ozark mountains, latitude 37° 30′, and after a long circuitous course, falls into the Mississippi at 20 miles above the mouth of the Arkansas. The White is navigable 400 miles, to Harding's ferry, and during some part of the year, 500 miles. Its greatest north-east branch, the Big Black, and the numerous tributaries of the latter, as the Spring, the Strawberry, the Currant, and others, are navigable about the same distance; together, - - - - - - - - - - 800

Tributaries of the Missouri, viz.

Gasconade river, enters from the south, 79 miles above St. Charles: it is navigable 150 miles, - - - 150

The Osage river, has its source in the Ozark mountains. It receives several fine rivers; and enters the Missouri at 120 miles from the Mississippi. It is navigable by estimation from 500 to 600 miles, - - 500

Chariton rivers; east and west; they unite on approaching the Missouri; and are navigable more than 300 miles, - - - - - - - - 300

Grand river, from the north, is navigable, for boats, 250

The Kanzas river, is made up of two branches, heading between the Platte and Arkansas; namely, the Republican and Smoky hill forks, and the branches of these. From either extreme source to the Missouri, is a distance of 700 or 800 miles eastward; yet so shallow is the river bed, that the Kanzas is not navigable more than 200 miles, except for a short interval in the height of flood season, - - - - - - - 200

The Platte river, rises in the Oregon or Rocky mountains, and like the Kanzas, crosses the Great Sandy Desert. After a course of 800 or 900 miles, it falls into the Missouri at 600 miles thence to the Mississippi. At midway it branches into two great forks, north and south, besides receiving in its course below, the Long fork, the Elkhorn, and other rivers of note. Through most of its length, however, the bed of the Platte is quite dry, in summer, for hundreds of miles, and the same is the case with its main tributary rivers; so that through most of this great extent, there is no navigation, except for a very limited time in flood season; and in the upper parts of these rivers, the Indian navigation is carried on by canoes of skin, floating lightly, - - -

The Yellow Stone river, is of a different character; it enters the Missouri from the south, in latitude 48°, and is navigable, in its main stream and branches, by estimation, 800 miles, - - - - - - - 800

Numerous other tributaries, from on both sides, swell the Missouri in its course; some of them perpetual streams of hundreds of miles in length; affording in the aggregate, navigation to a vast extent: this, notwithstanding that very many of the Missouri rivers are, by the circumstance of situation, condemned to have their outlets obstructed, by annual formations of bars of mud. The floods of the great river coming down later, are apt to back up the current of the others, - - -

The Arkansas River;

Is made up of two great branches; viz. the main Arkansas, and the Canadian river; the first whereof has its source within the Oregon or Rocky mountains, and pursues a long south-east course to its confluence with the Mississippi, in latitude 34°, which, taking in the meanders, comprehends a distance of about 2000 miles. Amongst its tributaries are these;—

The Negracky, or Red fork, rises near the mountains, and after an eastwardly course of 400 or 500 miles, joins the Arkansas at 900 miles above its mouth, - -

Newsawkatonga, or Grand Saline, on the south, has its source between the Arkansas and the Canadian, and joins the Arkansas at 150 miles below the Red fork, -

Little Arkansas, has its head waters near the Smoky-hill fork of the Kanzas river, and discharges at 860 miles above the mouth of the Arkansas, - - -

Stinking fork, rises near the head waters of the Neocho, and falls into the Arkansas at 800 miles above its mouth, - - - - - - - - -

Neocho, or Grand river, has its head waters in Missouri Territory, west of the Ozark mountains, and pursues a southern course by several branches. It falls into the Arkansas at 600 miles from the Mississippi, -

Illinois river, of Arkansas, rises in the Ozark mountains, state of Missouri, and falls into the Arkansas river, east of the Neocho, - - - - - -

The Canadian branch, has its source at the base of the Oregon mountains, and after a course eastward, of 1000 miles, joins the Arkansas at 550 miles thence to the Mississippi; and a little below the mouth of Illinois on the opposite bank, - - - - - -

The Canadian has two forks, viz.

North fork, at 50 miles from its mouth; this meanders eastwardly 800 or 900 miles, and receives in its course, Little North fork, - - - - - -

South fork, at six miles above the North: length of the South 400 to 500 miles, - - - - -

Notwithstanding the almost immensity of these river distances, described by the Arkansas and its parallel tributaries, they are comparatively very little navigable. Along the beds of them all, across the Great Desert, the water disappears entirely in the summer season, as in the case of the Platte river. The Arkansas is however most generally navigable for boats, as high as the mouth of the Neocho, otherwise Grand river, 600 miles, - 600

Miles 10,582
Unascertained, *Miles*, ...

NOTE.

Near the heads of the St. Peter's river, is situate Lake Traverse, one of the sources of the Red river of the north, and separated from the St. Peter's by two or three miles of ground, very little elevated above either the lake or the river. On the north, Lake Traverse sends its waters through an outlet, called Swan river, into the Red river, and in times of flood, it also communicates with the St. Peter's, on the south. So that here is presented one out of the number of striking exemplifications in this part of the continent, of the fact that it is not high ridges of mountains generally or altogether, which have determined the course of river streams from their sources, into one or another channel or direction. Here we have the head waters of two mighty streams; one of them taking a direction nearly north, and discharging into Hudson's bay in latitude 57°; the other a southern course, and discharging into the Gulf of Mexico in latitude 29°. They rise in a valley, far from any mountain; on the contrary, amidst lakes and swamps, within a short distance of each other, and during seasons of flood are in actual contact. The Mississippi has its extreme source in Turtle lake, north of Little Winnepec, and close to Red lake; which is another of the sources of Red river, by way of Red fork.

In the tract of country lying between latitude 45° and 48° north; longitude 93° and 97° west from Greenwich; that is to say; in 200 miles square of surface, we have an interlockage of the head waters of a number of large rivers, terminating in three of the mightiest streams that are known. The Mississippi river, and many of its great tributaries, proceed from the same lakes and swamps, which supply the waters of Nelson's river, and of the St. Lawrence.

At Lake Traverse, the "Columbian Fur Company," established since 1822, have their principal station: the latitude of it is 45° 40′. The lake is 15 miles in length. From whence, at 400 miles of navigation distance, taking the Swan river outlet, and the course of Red river, which is winding, you arrive at the town of Pembina; which lies within the United States domain; but at the north outskirt of this town there is affixed a boundary mark with Upper Canada, latitude 49°.

The whole length of Red river, from the Swan channel, to its entrance into Lake Winnepec, counting after the same manner, is probably 600 miles.. Besides receiving the waters of Otter tail river, the eastern source of which is Otter tail lake, it has many tributaries, whereof the Pse or Rice river, the Chienne, the Buffalo, the Elm, the Wild Rice, the Plane, the Sandhill, the Goose, the Red fork, the Turtle, the Big Saline, the Pack, and some others, lie within the United States: several of the latter affording navigation through lakes and swamps, towards the heads of the Mississippi, and including in that general course, each one a large circuit. The Assiniboin river, in the British territory, is one of much importance, and navigable, at all stages of the water, to a great distance.

The heads of the Mississippi, and of course the heads also of those other streams diverging from the same swampy spot; some towards Lake Winnepec to swell the Nelson, and some towards Lake Superior and the St. Lawrence; are computed to be 1200 feet above tide water.

From the frontier settlement of Pembina, on Red river, latitude 49°, the distance to York factory on Hudson's bay, by water, with 25 portages, is, by estimation, 845 miles.

From the same, to New Orleans, by water, with three portages, 3000 miles.

From the same, to Buffalo, on Lake Erie, by the way of Red lake, by water, but with many portages before reaching Lake Superior, 1963 miles.

Such is the aspect of the natural navigation of the country, north, south, and east, from this spot.

STATES OF TENNESSEE, MISSISSIPPI, LOUISIANA, ALABAMA, GEORGIA, NAVIGATION.

N.—From the confluence of the Tennessee and Ohio rivers in Callaway county, Kentucky, up the stream of Tennessee, to the foot of the Muscle Shoals, near Florence in Alabama. Distance, *Miles*, 250

◆

A.—From Florence, by canal, or else by the channel of the river rendered at this place navigable, to Marathon, or Brown's ferry, on the Tennessee above the Muscle Shoals. Distance, *Miles* 25

No. 77.

THE MUSCLE SHOAL CANAL.

This proposed improvement may, it is said, consist either in canal, or in a removal of the existing obstructions from the bed of the river, in such a way as to contract and deepen the channel. The obstructions are an immense collection of loose stones and shells, besides fresh water clams, and turtles; the river at this place spreading out, and forming several islands.

◆

N.—From the head of the Muscle Shoals of the Tennessee, up the river stream, to the suck, or whirl, at Cumberland mountain, Hamilton county, and thence up to the head of navigable water, at Tellico blockhouse. Distance, by the windings of the river, *Miles* 625

M.—From Tellico blockhouse on the Tennessee, by canal, or by a mixed navigation, to the navigable waters of Savannah river; taking for route, up the main Tennessee valley, or up the Tellico and Hiwassee valley, and down that of the Tugaloo.

Distance, to Augusta, *Miles*, 250

No. 78.

TENNESSEE AND SAVANNAH CANAL.

Surveys to determine the line of route for the projected connexion of these two rivers, are to be made.

N.—From Augusta, down the river stream, to Tibee point, 18 miles below the port of Savannah.

Distance, *Miles*, 158

M.—From Augusta, by canal and other water improvements, up the course of the Upper Savannah and the Tugaloo, and across to the valley of Chatahootchee and Flint rivers, and to the heads of their natural navigation; down which streams into the Appalachicola, and down the latter, 70 miles, to St. George's sound. This sound communicates, at 50 miles eastward, with Appalachee bay.

Distance, by a mixed navigation, *Miles*, 550

No. 79.

SAVANNAH AND APPALACHICOLA CANAL.

The ground, for this also, is to be regularly surveyed. As yet, the Chatahootchee river passes through Indian possessions; but the removal of the Indians to another district of the country, it is expected, is at hand.

A.—From Fort Deposite, on the Tennessee river, 20 miles south-east of Huntsville, by canal, to the navigable water of the Tuscaloosa, or Blackwarrior river, below the falls thereof at Tuscaloosa town.

Distance, *Miles*, 150

No. 80.

TENNESSEE AND TOMBECBEE CANAL.

And the ground for this. The inducements to a direct and easy water communication between Mobile bay and the promisingly productive tracts of country here in view, are sufficient to ensure, that one or more, if not all of the plans suggested for it, will have an early execution.

◆

N.—From below the falls of the Blackwarrior, down the river stream, to the mouth thereof, at Demopolis, and down the Tombecbee river, to Fort St. Stephen, which, so far, is a boat navigation, and thence, by a sloop and schooner navigation, down to Fort Stoddart; whence, through the river and bay of Mobile, to Fort Bowyer, at Mobile point. Distance, *Miles*, 340

NOTE.

A regular steam boat line is now established between Mobile port, at the head of Mobile bay, and Tuscaloosa town. Distance, 319 miles of the 340.

◆

N.—From Fort Bowyer, up the bay, and up the Tensaw branch of Mobile river, to the confluence of the Tombecbee and the Alabama; whence, up the latter to the head of schooner navigation at Claiborn; and thence by boat navigation, to its extremity at Fort Jackson, where the Coosa and Talapoosa rivers unite to form the Alabama. Distance, by the serpentine course of the river stream, *Miles*, 360

NOTE.

A steam boat line is established also on this route to Montgomery, within about 15 miles of Fort Jackson. They touch at Canton, Cahawba, Vernon, plying to and from Mobile and Montgomery. Distance, 331 miles of the 360.

◆

M.—From the point last designated, up the course of the Coosa river, and across the valley at Wills creek, to a point of the Tennessee, east of Fort Deposite, where the Tombecbee canal, as above inserted, is supposed to unite. Distance, by canal and improved channel together, *Miles*, 250

No. 81.

TENNESSEE AND ALABAMA CANAL.

Surveys and levelling are yet to be gone into, to decide respecting this projected undertaking, like as to the foregoing, and to the next also here inserted.

◆

M.—From the confluence of the Blackwarrior river with the Tombecbee, at Demopolis, or Eagleville, by canal, or a mixed navigation, up the Tombecbee valley, to a navigable point of Bear creek, and thence to the mouth thereof, on the Tennessee river, below Havana, in Lauderdale county, west of the Muscle Shoals.
Distance, *Miles*, 240

No. 82.

BEAR CREEK CANAL.

The northern part of this projected communication is, as yet, within the boundaries of the Chickasaw Indians.

No. 83.

HIWASSEE AND COOSA CANAL.

The Okou, a navigable branch of the Hiwassee river, and the Connesaugo, a navigable branch of the Coosa, approach their waters within about nine miles, near the Georgia and Tennessee line; and the ground, it is said, is favourable to a connexion, by canal, at a trifling expense.

At a meeting held in Cahawba, Alabama, on the 20th May, 1823, the project was recommended, as a means of laying open forthwith, a passage for boats, from the head waters of the Tennessee river, in Virginia, through the Coosa and Alabama rivers, to Mobile and the Gulf of Mexico.

No. 84.

LA FOURCHE CANAL.

Canal works have been projected, and are on foot, to render this pass of the Mississippi navigable to the sea. The efflux, at Donaldsonville, is 81 miles above New-Orleans.

No. 85.

MISSISSIPPI AND PONTCHARTRAIN CANAL.

A board of United States engineers are engaged in selecting a route for the construction of a canal between the Mississippi and Lake Pontchartrain.

See Note at Florida.

SUMMARY FOR THE STATES OF TENNESSEE, MISSISSIPPI, LOUISIANA, ALABAMA, AND GEORGIA.

Natural Navigation,	*Miles*, 1733
Artificial Navigation,	175
Mixed Navigation,	1290

To which, add as follows:

IN TENNESSEE STATE; VIZ.

The Cumberland river, its middle section lying within this state, navigable 300 miles,	300
The Holston branch of the Tennessee river, navigable 150 miles,	150
Tributaries of the Holston; the Watauga, the French Broad, and some others, and sub-branches,	
The Clinch branch of the Tennessee river, a part whereof, lying in Virginia, is navigable 200 miles,	200
Powell river, a branch of the above; this and sub-branches,	
Duck river, falls into the Tennessee in lat. 36°, is navigable 90 miles,	90
The Hiwassee river, enters the Tennessee 70 miles above the Whirl, is navigable 80 miles,	80
Tributaries of the Cumberland; the Caney fork, the Red river, the Marpeth, the Obeds, and their branches, some of which are navigable to a great distance, for boats,	
The Wolf river, the Big Hatchie, the Forked Deer, and the Obions, flow westwardly into the Mississippi river: they are all navigable; as are some of their branches; many of the sub-branches to the larger streams here situated, are also navigable,	

IN MISSISSIPPI STATE; VIZ.

The Yazoo river, rises in the Cherokee country, and falls into the Mississippi river at 12 miles above the Walnut Hills: it is navigable for boats 150 miles, - 150

The Big Black, rises in the Choctaw country, and falls into the Mississippi at 15 miles above Natchez, -

The Homochitta river, receives many streams, in a long south-western course, and enters the Mississippi near to a junction with the Red river, - - -

The Buffalo river, from Amite county, winds to its discharge at Loftus Heights, two miles above Fort Adams, - - - - - - - - -

The Pearl river, has a number of sources, in Hinde county, near the centre of the state: it flows south, and falls into the strait, at Fort Rigolets, between the lakes Pontchartrain and Borgne. Below lat. 31°, it forms the boundary of the state with the state of Louisiana. In many places it is obstructed by shoals and timber; in others navigable, - - - - - - - 150

The Leaf, and Chickasahas rivers, which unite in lat. 31°, and form the Pascagoula: they rise from several sources, and are navigable 100 miles, - - - 100

IN LOUISIANA STATE; VIZ.

The Red river, is, in this state, the main tributary of the Mississippi: it enters the state at the north-west angle, lat. 33°. Its sources are in the mountains of Mexico; and, counting from where it strikes upon the western line of Arkansas territory, it has a course, within the United States, of 1000 miles; it joins the Mississippi, in lat. 31°. It is navigable, during part of the year, up to the Great Raft, 500 miles; but the lower navigation still is liable to stoppages, by trees and floats of timber choking up the channel, - - - -

Near the latitude, as above, of 33°, on the border of Red river, there commences a prodigious chain of lakes, and swamps, and channels, occasioned by periodical overflowings; and which follows the course of this river, down to the latitude of its junction with the Mississippi; from whence, various rivers, as well as numberless bayous or channels, strike off and spread, south and south-westward, and go to form or augment what is called the Mississippi Delta. Of these rivers,

The district of Opelousas possesses, viz. the Calcasieu, the Mermenteau, the Courtableau, the Atchafalaya, and others, including the Sabine river, which bounds the state on the west, up to lat. 32°. - -

The Atacapas district, possesses the Mermenteau, the Vermillion, the Teche, the Atchafalaya, and others, -

They spread into numerous lakes, and terminate generally in bays, and sounds, and channels, on the sea border; an immense assemblage and succession of these waters, with channels one to another, in all directions, being comprehended within the curve line of coast on the Mexican gulf, from the river Sabine to the main passes of the Mississippi; and it is thence continued on, or rather another assemblage is located, derived from similar sources on the eastern banks, and extended to the great outlet of lake Pontchartrain.

The Atchafalaya issues from the Mississippi near to where the Red river enters, and thence diverging, with numerous inflexions, towards the gulf, discharges into Atchafalaya bay, after a course of 193 miles. The channel is encumbered by a natural raft, or accumulation of drift timber from the Mississippi, of many miles in extent, - - - - - - - -

The Crocodile, the Boeuf, the Courtableau, and the Teche rivers, are tributaries of the Atchafalaya, and are remarkable, especially the Teche, for their very winding, tortuous course: they unite, and taken together have a general course of about 120 miles, but are really more than 300 in length. The channel of the Teche mostly deep, but stopped at many places, - - - -

La Fourche river, is another of the Mississippi outlets; the efflux from which, is at Donaldsonville. By a south-east course of 120 miles, it falls into the gulf. -

Ibberville river, at Baton Rouge; the great eastern outlet of the Mississippi; it communicates with the gulf through the lakes Maurepas, and Pontchartrain, and Borgne; also with the Bay of Mobile, through the pass Au Héron, - - - - - - - -

The Washitta river, a great tributary of the Red river, has its sources in the mountainous prairies of Arkansas. In a course southward of 450 miles, it receives the Derbane, the Barthelemy, the Boeuf, and other rivers; some of which are 200 to 300 miles in length. The Washitta falls into the Red river at 25 miles above the junction of this with the Mississippi. The lower part of the Washitta, denominated Black river, affords a constant navigation to ships of burthen, - - - - - -

IN ALABAMA STATE, VIZ.

The Talapoosa river, rises in the Upper Creek district of this state, which it bisects, running south, and joining the Coosa at Fort Jackson, - - - - -

The Cahawba river, has its sources, by several branches, in Jefferson and St. Clair counties: after a course of 150 miles south, it falls into the Alabama river at Cahawba city, the centre of the state, - -

The St. Andrews, the Choctaw, the Yellow water, the Connecuh, the Perdido, and other streams flowing south, from this state into West Florida, - - - -

Tributaries of the Tombecbee river, of the Blackwarrior, of the Coosa, and of the Tennessee in this state; they are numerous, - - - - -

Passage from Mobile bay, westward, by the pass Au Héron or Pascagonla bay, through Lake Borgne, Lake Pontchartrain, Lake Maurepas, and the river Ibberville, to Baton Rouge; a navigable distance of 150 miles, - 150

IN GEORGIA STATE, VIZ.

The Great Ogatchee river, runs nearly parallel to the Savannah; and discharges, at 18 miles south-west thereof, into the Atlantic. It receives, in Bryan county, the Canoochee river, and is navigable, with some interruptions, 300 miles, - - - - - - -

The Canoochee river, tributary to the Great Ogatchee, is navigable for rafts and boats, up to its confluence with Cedar creek, - - - - - -

The Alatamaha river, is formed of two great branches; the Oakmulgee and the Oconee rivers; which have their sources near to those of Chatahoochee; from whence diverging, they afterwards pursue a long parallel course south-east, and in latitude 32° unite; the joint stream continuing that course. It receives the Great Ohoopee river, and enters the sea by several mouths; from whence, up to Milledgeville on the Oconee branch, the navigation is 220 miles, - - - - - - 220

The Great Ohoopee, tributary to the Alatamaha, has its source in Washington county, taking a course east of south, to its mouth in Tatnall; whence it is navigable 40 miles, - - - - - - - - 40

The Oakmulgee river, has an inflected course of 300 miles; in which it receives many tributary streams. It is navigable up from its confluence with Oconee, 150 miles, - - - - - - - - - 150

The Great Santilla river, is formed of three forks from the Cypress swamp, each of which has a long winding course: the united stream falls into the Atlantic, at Cumberland island, - - - - -

St. Mary's river, rises in Eokefanokee swamp, and after a very crooked course of 150 miles, enters the sea at Amelia Island. It is deep, and generally navigable. See Florida, - - - - - - - -

The Lappapaha river, and the Ocolocconee river, flow southwardly from this state, into West Florida, -

Broad river, Little river, Bear creek, Beaver dam, and other waters; tributaries of the Savannah river, -

Tributaries of the Oconee, of the Oakmulgee, of the Flint river, and of the Chatahoochee on the east. Together very numerous, - - - - - -

The Warsaw sound, the Ossabaw sound, St. Catherine's sound, Sapelo sound, Doby sound, Alatamaha sound, St. Simon's sound, Jekyll sound, St. Andrew's sound, Cumberland sound: these, along the coast of the state, between Savannah river and St. Marys, afford a navigation of 250 miles, - - - - - - 250

Miles, 5228
Unascertained, *Miles*, ...

NOTE.

The legislature of Georgia have recently passed a bill, instituting a board of public works for that state; and another bill, directing the board to make surveys and estimates for the construction of canals, or railways, between the navigable waters of the state entering the sea, and the western parts of the state; with a view to a junction hereafter of such canals, or railroads, with the Tennessee and the Mississippi rivers. The head branches of the Tennessee, as also the Chatahoochee river, will, no doubt, be made to unite with the waters both of the Oakmulgee and the Oconee.

No. 86.

TENNESSEE, OAKMULGEE, AND OCONEE CANALS.

A canal is proposed, from Savannah river to the Ogatchee; and thence to the Alatamaha river, and a survey for it about to be gone into.

No. 87.

SAVANNAH, OGATCHEE, AND ALATAMAHA CANAL.

NOTE 2.

February, 1826.

An act of incorporation passed the Georgia legislature, on the 20th of December, 1825, in favour of Mr. Ebenezer Jenckes and associates, or representatives; authorizing him or them to construct a canal between the Great Ogatchee and Savannah rivers; and vesting in him, or them, a proprietary interest therein, for the term of 60 years; he, Jenckes, being bound to have the said canal finished and complete, within six years from the date of this act; and likewise bound to convey, at the expiration of the term of 60 years, if so required, to the state of Georgia, all right and title to the canal and appurtenances, upon receiving from the treasury, a sum of money, reimbursing the whole amonnt of expenses, together with an interest, above all charges, of eight per centum, on such part of the stock as shall not have afforded such an interest.

An act likewise passed the legislature, in favour of the same, for another canal, extending the communication after the manner contemplated, from the Ogatchee river to the Alatamaha; with a grant of privileges, and under conditions the same as in the above instance, nearly.

In virtue of which two acts of the state, an engineer was immediately engaged; and there has been a regular survey of the ground, in order to fix a route for the first of these undertakings; also a reconnoissance or preliminary examination, in regard to the other.

The report states, that the proposed canal between the Ogatchee and Savannah rivers, may be eligibly located, so as to strike from Jones' lake to the upper end of the city of Savannah; distance 16 miles; lockage 29 feet; the engineers' estimate of cost 162,676 dollars. And, taking the distance between the Ogatchee and Alatamaha rivers, at 50 miles; that is to say, from fort Argyle in a straight line, to strike upon a point at or near the mouth of the Great Ohoopee river, the estimate for this is 480,000 dollars; making, for the whole canal distance of 66 miles, between the Alatamaha river, and the Savannah river, at the city of Savannah, the sum of 642,676 dollars. Width of canal at bottom, to be 33 feet; locks 18 feet wide, 90 feet long.

By the construction of this line of canal, of 66 miles, there will be saved in distances, between the upper navigable waters of the Oakmulgee, the Oconee, the Ohoopee, the Ogatchee, the Canoochee, &c. &c., and the port of Savannah, many hundreds of miles. The route at present taken, is to descend to the sea border, and there enter the sounds or inland passage leading to Savannah; and vice versa from thence, returning upwards. Through the said passage, from Darien, on the north channel of Alatamaha, to the port of Savannah, is 150 miles.

But, moreover, the line of communication once perfected as far as the Alatamaha river, there will, no doubt, soon afterwards, be a continuation of it to Appalachee bay, in the gulf of Mexico. To connect the port of Savannah thus with the gulf, there is a distance of not more than about 230 miles; and it is likely to be a thoroughfare of not inferior importance to the one that may be accomplished by the St. Mary's river, or the St. John's.

A bill is before congress, appropriating 60,000 dollars to the object of removing obstructions to the natural navigation in the Savannah river.

◆

An Act has passed the legislature, incorporating the "Mexican Atlantic Company of Georgia;" with powers to construct canals, or railways, between the waters of the Atlantic ocean and those which flow into the gulf of Mexico. Capital, 2,000,000 dollars.

No. 88.

ATLANTIC AND MEXICAN CANALS; OF GEORGIA.

It is quite probable, that either a canal or a railroad, between Augusta, on the Savannah, and Fort Lawrence, on Flint river, will very soon be constructed.

SOUTHERN ATLANTIC COAST; ALSO, NORTH CAROLINA AND SOUTH CAROLINA NAVIGATION.

N.—From Hampton Roads, in the Chesapeake, up Elizabeth river, to the entrance of the Dismal Swamp canal, at nine miles above Norfolk. Distance, *Miles*, 20

A.—From the point last mentioned, on Elizabeth river, by canal, to Pasquotank; a water of Albemarle sound. Distance, *Miles*, 22

No. 89.

THE DISMAL SWAMP CANAL.

This canal of connexion, between Virginia and North Carolina, was completed, so far as to be in the receipt of tolls, in 1822. It is cut through the Great swamp, and fed with water from a lake in the midst. It is 22¾ miles in length, 38 feet wide at the water surface, 5½ to 6 feet deep, and is calculated for admitting vessels to pass through the locks, with 50 or 60 hogsheads of tobacco, or about 250 barrels of flour, with masts standing. An extension of this canal is in contemplation, as also an enlargement of its dimensions; and congress have now, 1826, a bill before them, authorizing the secretary of the treasury to subscribe 150,000 dollars, equal to 600 shares, in the canal company's stock, towards enabling them to effect the object.

NOTE.

The engineer department of the United States has made a report, through the secretary of war, to Congress, March 9th, 1826, in reference to the proposed system of internal navigation, near the Atlantic coast of Virginia and North Carolina.

The report states, that incidentally to certain examinations made by the board of engineers, for selecting a site for a naval depot, and projecting fortifications, it was ascertained that those states possess great capability for the internal navigation in question, on an extensive scale, so as, besides conferring other benefits, to be essentially connected with the defences of the country.

The board recommends, in case the plan be adopted, that the Dismal Swamp canal should be extended, and have its dimensions enlarged. The board suggests a line of navigation from Norfolk, to Beaufort in North Carolina, including the Dismal Swamp as a part of that line; and, for the remainder, to connect the Roanoke, the Pamlico, and Neuse rivers, by canal, passing through Plymouth, Washington, and Newbern, whence proceeding on to Beaufort.

No. 90.

NORTH CAROLINA ATLANTIC CANAL.

The civil engineer of the state proposes a plan for opening a new passage from Albemarle sound to the ocean, a little to the south of Nag's Head.

Much of the produce of the lands on the Roanoke, which are very rich, are now conveyed down the river to Albemarle sound, and thence through the Dismal Swamp canal, to the Norfolk market. It has been proposed to shorten the distance, by a canal leading from the Roanoke, above the Great falls, near the Virginia line, to Murfreesborough, on the Meherrin, and thence by the Meherrin, Chowan river, and Bennett's creek, across to the Dismal Swamp canal, and so to Norfolk.

No. 91.

ROANOKE AND NORFOLK CANAL.

This route was examined some years ago, by commissioners of North Carolina and Virginia, and reported on as practicable, at an expense of 761,522 dollars.

N.—From the south termination of the canal at Pasquotank, down this river to Albemarle sound; down which, and through Pamlico sound; also through Core sound to Beaufort, and Bogue sound to Swanborough, and thence through Stumpy and Toomer's sounds; the head of which last is at a very trifling distance from New inlet, or Federal point, Cape Fear river. Distance, *Miles*, 270

M.—From New inlet, at Smith's island, at the mouth of Cape Fear river, up the stream to Wilmington, and thence, by a course of lock and dam and other improvements, up to the head thereof, formed by the union of Deep and Haw rivers, below Haywoodsborough, in Chatham county. Distance, *Miles*, 200

No. 92.

CAPE FEAR RIVER CANALS.

This work, so highly important for the interests of North Carolina, is prosecuting by the state, and is among a series of useful objects, to which the growing prosperity of the country has, within some years past, called forth an increase of attention: much has already been effected, in creating facilities of commercial transportation within the state; and much will yet be attempted, to improve the natural communications between the rivers of North Carolina and the sea. The present undertaking, goes as well to deepen and clear the ship channel below the port of Wilmington, as to render the river upwards from thence thoroughly navigable for steam vessels of burthen.

M.—From Haywoodsborough, Cape Fear river, by the valley of Deep river, across to a point on the Yadkin, below the Narrows, in Montgomery county, at or near

Blakeley, and thence down the course of the Yadkin river, into the Great Pedee at Cheraw, South Carolina; from whence, down to the mouth thereof, and to Winyaw bay point, 13 miles below the port of Georgetown, South Carolina. Distance, by a mixed navigation, *Miles*, 275

No. 93.

CAPE FEAR AND PEDEE CANAL.

The projected communication between these two rivers, is dependent upon regular examinations of the ground, yet to be made. In the meantime, much attention has been bestowed on clearing the Pedee river channel, from Cheraw downward to Georgetown. This work of improvement is still going forward, with a prospect of being finished very soon. The distance from Cheraw down to Georgetown, is, by the winding of the river, 270 miles. Short canals, at the different bends, will reduce it to 180 miles.

A.—From Winyaw bay, below Georgetown, by a cut into the Santee river, near the mouth thereof.
Distance, *Miles*, 10

No. 94.

THE WINYAW CANAL.

As above.

N.—From the mouth of Santee river, up the stream to its head, formed by the confluence of the Wateree and Congaree rivers, and up the latter to Columbia. Distance, by the meanders, *Miles*, 175

M.—From Columbia, through the Columbia canal, into Broad river, and through the Saluda canal, from Broad into Saluda river, up which, and through Drehr and Lorick's canals, on to the Abbeville county line, near Cambridge: also, from Santee river, by the Santee canal, into Cooper's river; down which, to the port of Charleston. Distance, by a mixed navigation, *Miles*, 150

No. 95.

THE SANTEE, COLUMBIA, AND SALUDA CANALS.

This article, of 150 miles of a mixed navigation, comprises five canals, with 28 locks, overcoming 217 feet of fall: all complete, except on the Saluda, towards Abbeville, which is to be completed, either by canal or by dam and sluice works, this year, 1825. The Santee canal, of very great importance to the trade and intercourse between the port of Charleston and a large section of the state, as also a part of North Carolina, was completed in 1802, at an expense of 650,667 dollars. It is 22 miles in length, 35 feet wide, and 4 feet deep.

SUMMARY FOR NORTH CAROLINA AND SOUTH CAROLINA.

NATURAL NAVIGATION, - - - - - -	*Miles*, 465
ARTIFICIAL NAVIGATION, - - - - - -	32
MIXED NAVIGATION, - - - - - - -	625

To which, add as follows:

The Chowan river, which is formed of the Meherrin, the Nottaway, and the Black rivers; all rising in Virginia, and, in their course, watering several counties: the Chowan falls into Albemarle sound: its branches afford a boat navigation of 200 miles, - - - 200

The Roanoke, a long and rapid river, having its principal source west of the Blue Ridge in Virginia, and discharges, by several mouths, into Albemarle sound. By some improvements effected, particularly at the falls above Halifax, its navigation, for boats, is extended to 300 miles. It is navigable to Halifax, below the falls, at which is constructed the Welden canal, for vessels of 45 tons. - - - - - - - - - 300

No. 96.

THE WELDEN CANAL.

The Dan river, a considerable southern branch of the Roanoke, flowing from the same ridge, and uniting with it in Virginia, Halifax county. The Dan has also received improvements, particularly at Danville falls, and is navigable to Danville, and beyond, - - - 100

No. 97.

THE DANVILLE CANAL.

Tar river, rises in the north of the state, and by a general south-east course, falls into Pamlico sound: it is navigable up to Tarborough, - - - - 90

Neuse river, rises also in the north of the state, and has a like general, but more winding course: it falls into Pamlico sound at 70 miles below Newbern, and is navigable, for boats, 200 miles, - - - - - 200

The Yadkin, or upper part of the Great Pedee, traverses the state south-east from the Alleghany ridge, into South Carolina. This river was surveyed, in 1818, from Wilkes' Court-house, in the mountains, down to Cheraw, a distance of 247 miles; and it was estimated that the sum of 250,234 dollars would render the whole of this distance navigable for boats of 10 tons, except at the Narrows in Montgomery; where a good road of seven miles was recommended, - - - -

The Catawba river, also crosses the state, and enters South Carolina as the Wateree, - - - -

Tributaries of the Catawba, of the Yadkin, of the Neuse, of Tar river, of the Roanoke, are many, each affording navigation, - - - - - - -

IN SOUTH CAROLINA; VIZ.

The Wackamaw river, rises from Wackamaw lake in North Carolina, and runs south by west, 70 miles, into Winyaw bay, - - - - - - - -

Little Pedee river, rises by several branches in North Carolina, and flows into the Great Pedee, at Yahany ferry, - - - - - - - -

Lynch creek, a considerable river, rising in North Carolina, and flowing south-east into the Great Pedee,

The Wateree branch of the Santee river, or a continuation of the Catawba, from North Carolina to its junction with the Congaree river, below Columbia, -

The Broad river, reinforced by several considerable streams from the north-west, as the Ennoree, the Tigre, the Pacolet rivers. It is improved and rendered navigable from its confluence with the Saluda at Columbia, up into North Carolina; to which distance, it is in consequence navigable for boats; and the other streams are navigable into the counties of Newberry, Union, and Lawrens, for boats also, - - - - - 250

The Seneca river, is formed of numerous streams from the Blue ridge of mountains, west of the upper waters of the Saluda; it augments the Tugaloo, or Savannah river, at Andersonville, Pendleton county, -

The Edisto river, rises by two branches, in Edgefield county, and discharges at Edisto island, south-west of Charleston, by outlets north and south. Navigation together, for boats, 150 miles, - - - 150

The Ashpoo river, the Combahee, and the Coosaw, which run south-eastwardly, into St. Helena sound, -

The Coosahatchie river, rises in Barnewell county, and runs south-east, through Beaufort, into Broad river, an arm of the sea, west and north-west of Beaufort island. Navigable together, 75 miles, - - - 75

Raccoon sound, Moultrie sound, James island sound, Kiawaw sound, Hilton head, or Cahbogan sound, and various channels on the coast of the state, between the Santee and Savannah rivers; they afford a navigation of 200 miles, - - - - - - - - -	200
Miles,	2687
Unascertained, *Miles*,	. . . .

NOTE.

In South Carolina, it is proper to add, there exist a number of navigation improvements, besides those specified above; some finished, and some in course of execution, under the direction of a superintendent of public works for that state. The Wateree river, below the falls, will, this year, 1825, be cleared of obstructions in its channel, through a distance of 84 miles, into the Santee; and a canal at the Wateree falls, is also to be finished this year. A canal on the Catawba above, was completed a year ago; and above that, at Rocky mount, Chester county, there is now constructing another work, and a great one of the kind; that is to say, one section of it is to be finished this year, at the expense of about 40,000 dollars; but there are six or seven other sections not yet begun, which it is very essential should be expedited, in order to overcome the falls at Rocky mount, by efficient lockage.

No. 98.

THE WATEREE AND CATAWBA CANALS.

These sections will require from 170,000 to 200,000 dollars additional, to be voted by the legislature; and well will the sum be applied; the object would warrant the application of one much larger; for, when this work shall be finished, a complete navigation, by the Catawba and the Wateree, will be laid open all the way from the extensive iron works of North Carolina, down to the Santee river, and of course to the sea.

The Seneca river, will this year be rendered navigable, by means of dam and sluice improvements, from opposite Pendleton Court house, down to its mouth at Andersonville, on the Savannah river, 150 miles above Augusta: and the sluicing mode is to be extended still upwards, along the Seneca and its tributaries, from Pendleton to the Blue ridge of mountain at the North Carolina line; the feasibility thereof, at no great expense, having been ascertained.

Attention has been directed to a re-opening and amending the navigation of the South Edisto river, in a distance of 70 miles up from its junction with the North Edisto, by removing quantities of drift timber, and making cuts, to straighten in some measure the tortuous channel.

A canal between Wackamaw river, which discharges into Winyaw bay, and Cape Fear river in North Carolina, has been suggested.

No. 99.

THE WACKAMAW CANAL.

Also, one to unite the waters of the Savannah and the Edisto rivers; for which, applications are to be made to the South Carolina legislature, at their ensuing session.

No. 100.

THE EDISTO AND SAVANNAH CANAL.

And, as an object of high national importance, in times both of peace and of war, (should war happen,) it is recommended by South Carolina, to the attention of the general government, to cause to be constructed a large navigable canal, parallel with the sea coast, from Winyaw bay to Wando river, running into Cooper's river just above Charleston; connecting Charleston and Georgetown.

No. 101.

CHARLESTON AND GEORGETOWN CANAL.

FLORIDA NAVIGATION.

N.—From St. George's sound, below the mouth of Appalachicola river, eastward, to the bay of Appalachee; across which, and up the bay of St. Marks, to St. Mark's river. Distance, *Miles*, 100

* * *

A.—From the head of St. Mark's bay, by canal, eastward, passing along on the south of Eokefanokee swamp, and crossing the rivers St. Pedro, and Amazura or Suawney, to the navigable water of St. Mary's river, at or near the south angle thereof, made by its winding course. Distance, *Miles*, 140

A.—From St. Mary's river, at or near the point last mentioned, by canal, south-eastwardly, to strike upon the St. John's river, at or near Jacksonville. Distance, *Miles* 30

A.—From a point of St. John's river, at or near the entrance of the canal last above mentioned, by canal, across to the bay and harbour of St. Augustine. Distance, *Miles*, 60

No. 102.

FLORIDA CANALS.

This suggested passage, between the Atlantic sea and the Gulf of Mexico, by means of a series of canals, when the time for its execution shall arrive, will most probably be realized in *a thorough conveyance for ships;* which, in such event, must confer on the trade of the country, benefits hardly calculable, in obviating the delays and perils of a navigation round the coast of the great peninsula of Florida, not less than 1000 miles; with all the dangers of the Tortugas bank, the Florida reefs, the Bahama shoals, and the depredations of pirates attendant, and combined with the want of good harbours in all the distance, some two or three points perhaps excepted, as St. Augustine on the east coast, Tampa bay on the west.

Sanguine expectations have been formed of the practicability of the plan, inasmuch as a supply of water and a summit are concerned in the prospectus: it is believed these local facilities exist abundantly.

◆

N.—From where the St. Mark's canal enters the St. Mary's river, down the stream of this river to its mouth, and thence down the sound to the entrance thereof between Talbot island and the mouth of St. John's river. Distance, Miles, 105

◆

N.—From the mouth of St. John's river, up the stream to the head of navigation: the source itself is, as yet, without being ascertained; but the river has been ascended to about latitude 28°, and found so far to maintain a depth of eight feet water. Distance, by the windings, *Miles*, 250

◆

SUMMARY FOR FLORIDA.

NATURAL NAVIGATION, - - - -	*Miles*, 455
ARTIFICIAL NAVIGATION, - - - - -	230

To which, add as follows:

The Escambia river, from the mouth of the Cunecuh down to Pensacola bay; through which, and along the sound, into the bay of Rosa; to the head whereof, and to the mouth of Choctawatchee river; this together, is a navigation of 150 miles, - - - - - - 150

St. Andrew's bay, the bay of Espiritu Santo, now called Tampa bay, Charlotte bay, Chatham gulf and bay, Mosquito inlet, and various other inlets on the coast of East Florida; these supply a navigation of 350 miles, 350

The tributaries of St. John's river, which receives in its course the waters of many creeks and detached lakes, and is itself enlarged in several places to the lake form, as in latitude 29°, where lake George is 20 miles long, by 10 miles broad, - - - - - -

Miles, 1185

Unascertained, *Miles*, ...

NOTE.

Florida, like Michigan, yet only "Territory," will soon acquire the title of "*State.*"

NOTE 2.

An article on the isthmus (peninsula) of Florida, has appeared lately, in some newspapers, purporting to be a translation from a manuscript in French, found on board of some piratical vessel, captured 16 years ago. It gives a short description of the peninsula; and the object of the editors who publish the translation is to show, that the country possesses an internal navigation, of which we have hitherto been kept in ignorance; that there does exist a passage, or passages, across, from the Atlantic to the Gulf of Mexico; and which, by way of lakes, and rivers, and channels, can be traversed without danger or difficulty. One of these communications, as pointed out and partly described, is between the bay of St. Esprit, now called Tampa bay, and the St. Lucie river outlet, or Mosquito river outlet; both north of Cape Carnaveral. Another communication, is between the Amazura river and the Atlantic side of the peninsula. The account moreover speaks of a canal from the river St. John, direct to one of the western outlets.

The details given, are not very intelligible, owing apparently to inaccuracy in the translation; but, the Florida peninsula is a very interesting spot to this Union, and, having so happily for herself become a member, there can be no doubt that the country will soon be thoroughly explored; her exact situation and capacities known, and all her resources laid open.

An appropriation has been made by congress, for surveys being gone into; and engineers are engaged in the object.

NOTE 3.

Referred to at Article No. 85.

The United States board of engineers for internal improvement, having completed their examinations between the river Mississippi and lake Pontchartrain, with a view to these being connected by a sloop navigation, have reported two routes as being favourable for the purpose; viz. one from the city of New Orleans, to enter lake Pontchartrain at two miles east of the mouth of Bayou St. John; the other from a point of the Mississippi, about two miles below New Orleans, to enter the lake at about five miles east of Bayou St. John; along either of which, a canal of the description required may be readily constructed.

It has been represented, that, by cutting merely about 12 miles of canal, an inland tide water navigation may be obtained, from the Mississippi river to the Appalachicola; a distance of 350 miles.

No. 103.

MISSISSIPPI AND APPALACHICOLA CANAL.

The route is as follows;—

From the Mississippi, through the Ibberville, the obstructions of which are to be removed, to Lake Pontchartrain; thence through Lake Borgne and Pascagoula bay, between the islands and the shore, to Mobile bay; which may be connected with the Perdido by a cut of four and a half miles, and this with the Pensacola bay, through the Grand Lagoon, by a cut of half a mile; thence through Santa Roza sound and bay, 40 miles, to the Choctowatchee river, which may be connected, by a cut of five miles, with the St. Andrew's bay; through which you pass 24 miles, and thence, by a cut of two miles, to the Chipola river, which discharges into the Appalachicola.

Application is at present made to congress, for them to direct a survey that shall ascertain as to the practicability of this project; the importance of which is quite evident. It may be regarded as an extension of the projected Florida canal; or rather, the completing section of that great line of inland *tide water* navigation, which is to extend, with very little interruption, from Boston to New-Orleans.

GRAND SUMMARY.

ADDITION OF THE COLUMN OF MILES; VIZ.

Page 5,	-	130	Bro't forward,		2173	Bro't forward,		4341
6,	-	240	Page 43,	-	400	Page 72,	-	33
7,	-	160	44,	-	50	73,	-	124
8,	-	20	45,	-	120	74,	-	35
10,	-	45	46,	-	250	76,	-	45
11,	-	120	47,	-	60	77,	-	90
12,	-	90	48,	-	165	78,	-	14
15,	-	60	49,	-	310	80,	-	60
17,	-	30	50,	-	35	81,	-	93
20,	-	26	60,	-	63	82,	-	55
21,	-	310	63,	-	25	83,	-	275
28,	-	327	64,	-	106	87,	-	70
29,	-	363	65,	-	330	88,	-	20
39,	-	75	66,	-	117	89,	-	83
40,	-	75	69,	-	101	90,	-	282
41,	-	102	71,	-	36	93,	-	365
		2173			4341			5985

Bro't forward,	5985	Bro't forward,	10,150	Bro't forward,	17,396
Page 96, -	213	Page 120, -	500	Page 139, -	490
97, -	90	121, -	780	140, -	850
98, -	360	122, -	370	150, -	42
101, -	154	125, -	325	152, -	470
102, -	572	127, -	979	153, -	460
110, -	928	128, -	184	154, -	150
113, -	300	130, -	2250	159, -	330
116, -	600	137, -	900	160, -	355
118, -	948	138, -	958		
	10,150		17,396		20,543

Or, total of a continuous line of thorough inland navigation, between the Mississippi river *on the west*, and the bays of outlet, or Atlantic ports, *on the east;* and between the great lakes *on the north*, and the bays and ports of outlet in the gulf of Mexico, *on the south*, - - - - - - - - *Miles*, 20,543

Of which, this distance has been described, as consisting of *natural navigation*, - - - 9,933

This distance, as consisting of *artificial navigation*, - - - - - - - 4,779

This distance, as being of a *mixed character*, 5,831

20,543

To this, there is to be added; viz.

The amount of sundry distances of natural navigation, as specified at the several *summaries*, but not considered as within the direct continuous line described upon the map. It is obvious that these streams, and parts of streams, will, most or all of them, hereafter, in due course of time, also receive degrees of improvement, by canals of communication, one to another;—from the great main trunks, branches will diverge, and these again spread out in all directions, so as to accommodate every portion of the sociable and commercial community, - - 6,714

Carried forward, *Miles*, 27,257

Brought forward, *Miles*, 27,257

The amount of distance, in natural navigation, upon the principal rivers west of the Mississippi river, and east of the Oregon or Rocky mountains, as is herein enumerated and described, and as appertaining to the Missouri and Arkansas state and territories, in the west, - - - - - - 8,332

Making a sum total, for the leading navigation distance of the country, as it has been herein particularized, of - - - - - - - *Miles*, 35,589

This then is composed as follows; that is to say, there is comprised of it, viz.

In the states of New-England, - -	1,231
In New-York state, - - - -	2,573
In the states of New-Jersey, Delaware, Maryland, Pennsylvania, Ohio, - - -	4,439
In the state of Virginia, - - - -	1,738
In the state of Indiana, - - - -	1,100
In the state of Kentucky, - - -	610
In the course of the river Ohio, - -	948
In the middle great lakes, - - -	1,130
In the states of Illinois and Michigan, -	650
In the lakes Ontario and Superior, - -	974
In the North-Western territory, east of Mississippi river, - - - - - - -	514
In the course of the river Mississippi, -	2,250
In the states of Tennessee, Mississippi, Louisiana, Alabama, Georgia, - - - -	5,228
In the south-eastern inland border, - -	312
In the states of North-Carolina and South-Carolina, - - - - - - -	2,375
In the state of Florida, - - - -	1,185
In the state and territories of Missouri and Arkansas, - - - - - - -	8,332
	35,589

Carried forward, *Miles*, 35,589

Brought forward, *Miles*, 35,589

To which sum total, there is still to be added, namely: for the aggregate of what has been herein noticed, but not as yet brought into account in the shape of any computation in miles.

It consists of a vast many rivers, and parts of rivers, and other internal waters, enumerated under the respective heads, at the summaries; and, moreover, of a multiplicity of water courses, which have not been herein enumerated, or designated by name, but which pervade every state of the Union, and are, more or less, navigable. Upon the whole, it would appear a probable approximation to the truth, if so much of the entire natural navigation of the country as has not herein been reduced into miles, be taken to be equal, in distance, to the more conspicuous or leading portion of the same, as it has been herein particularized, and reduced into miles at the several districts respectively: so that, according to this rule, we have to add, the aggregate of the following; viz.

Natural navigation, as specified, in the states of New-England, - -	355		
Mixed navigation in ditto, 450 miles, of which, taking two-thirds for natural,	300		
		655	
Natural navigation, as specified, in New-York state, - - - -	506		
Mixed navigation in ditto, 870 miles, of which, taking two-thirds, - -	580		
		1,086	
Natural navigation, as specified, in New-Jersey, Delaware, Maryland, Pennsylvania, Ohio, - - - -	968		
Mixed navigation in ditto, 1,078 miles, of which, taking two-thirds, -	719		
		1,687	
Carried forward, *Miles*,		3,428	35,589

Brought forward, *Miles*,		3,428	35,589
Natural navigation, as specified, in Virginia,	820		
Mixed navigation in ditto, 918 miles, of which, taking two-thirds,	612		
		1,432	
Natural navigation, as specified, in Indiana state,	500		
Mixed navigation in ditto, 600 miles, of which, taking two-thirds,	400		
		900	
Natural navigation, as specified, in Kentucky state,		610	
Natural navigation, as specified, in the North-Western territory, east of Mississippi river,		462	
Natural navigation, as specified, in Illinois and Michigan states,		380	
Natural navigation, as specified, in Tennessee, Mississippi, Louisiana, Alabama, Georgia,	3,763		
Mixed navigation in ditto, 1290 miles, of which, taking two-thirds,	860		
		4,623	
Natural navigation, as specified, in North-Carolina and South-Carolina,	1,740		
Mixed navigation in ditto, 625 miles, of which, taking two-thirds,	417		
		2,157	
Natural navigation, as specified, in Florida,		955	
Natural navigation, as specified, in Missouri and Arkansas, west of the Mississippi river,		8,332	
These making together,			23,279
Which gives, for length of inland navigation, *Miles*,			58,868
Consequently, if this length be doubled, it will show the extent, or thereabout, of lake, and river, bay, and harbour—coast navigation, altogether; say,			58,868
		Miles,	117,736

SAY,—

Extent of the lake, and river, bay, and harbour—coast navigation of the United States, not including that of the territory west of the Oregon or Rocky mountains, 117,736 miles.

Within which, it has here been shown, there is a length of about 6722 miles of canal, either existing, or in progress of construction, or in contemplation.

It appears not at all improbable, that, in the course of 10 years from this time, 3000 miles of the same will be completely finished and in use. And it is worthy of notice, that, in 1817, when the Erie canal of New-York was commenced, there was not, perhaps, 100 miles of canal-work finished in all the United States: what then existed, was composed chiefly of very short canals, at some of the rapids and falls of rivers.

In England, during the last 60-odd years, there have been constructed about 100 canals, measuring in length about 2700 miles, and at an expense, it is said, of 132,000,000 dollars. This interesting fact is, along with the foregoing, mentioned, not for the purpose of drawing any comparison between one country and the other, in their operations or capabilities, but merely by way of an analogical intimation of what is likely to be the state of this kind of navigation improvement HERE, within a time at no great distance.

GENERAL NOTES.

NOTE 1.

On the Canada side also of the great lakes, numerous and important canal works are contemplated.

The "Welland canal," by which Lakes Erie and Ontario will be navigably connected, is in execution. A portion of the company's stock met with a ready subscription in New-York. It strikes from the mouth of Grand river, Lake Erie, north-east on the Welland, down which stream to near the junction thereof with the Niagara; and thence down the valley of Twelve Mile creek, to the mouth thereof, at Lake Ontario. The distance 43½ miles; lockage 334 feet. It will be adapted to sloop navigation.

Estimated expense, including the construction of a harbour at the mouth of Grand river, 888,000 dollars.

NOTE 2.

Steps have been taken by sundry individuals, sanctioned and encouraged by the government of Guatemala, to run levels, and effect a regular survey of the ground, adjacent to St. John's river and the Lake Nicaragua, with a view to a navigable communication, upon a large scale, between the Mexican gulf and the Pacific, through that part of the isthmus. Engineers from the United States, and particularly from New-York, have been invited to visit those countries which compose and border the immense American isthmus; and have probably a mutual understanding in the several explorations now going forward, not only at Nicaragua, but at other points where probabilities appear of important navigation improvements being accomplished; and particularly the great desideratum of "*a junction.*"

From the city of Mexico, some interesting accounts on the subject were, not long since, received. It is well understood that the three governments of Mexico, Guatemala, Colombia, each possessing a portion of the isthmus, are all decided on the point of laying open a navigation across their respective territories, by the aid of such canal works as shall be found competent. We have assurances that these works will be gone into, and effectually prosecuted, as soon as the needful preliminary examinations shall have been concluded. How soon this may be, it is not easy to say, for the unexplored field to work upon, is of immense dimensions, and complexity:—there is ground to travel over, and there is a fine scope for the exercise of the ingenious scientific surveyor's judgment, both in selecting his means or materials, and in drawing his conclusions amidst the variety of natural circumstances which present themselves. Besides a multiplicity of bays on both oceans, and lakes, and rivers, in every direction, to be examined, as to their affording greater facility or less facility for a commodious passage, there are an abundance of phenomena, such as mountain passes, and levels, and currents, and periodical winds and rains, all to be taken into the account; and most of these, it may be said, are rather to be *explored*, as things yet remaining in some degree secret, than to be known and decided upon from hasty observation and inquiry. But, upon the whole, there is now very little doubt existing, that, sooner or later, considering the fervour, and the every-day-increasing intelligence of the times, the object of a passage from sea to sea, will be accomplished, and at more points than one, and in a commodious satisfactory manner, for *general navigation.* From which period, arrive soon as it may, there may be preferred a claim for the insertion of a conspicuous mark in the commercial calendar, to denote that *a new era has commenced in this department of the world's affairs.*

If the many surprising and rapid changes, and refinements in the *useful* arts of every description; the fruits of discoveries which a vehement spirit of investigation and analysis has given rise to;—if these, within the last 50 years, following in quick succession, have indicated, and are now more and more giving infallible notice, that they are leading to a great and memorable epoch in the affairs of men, the event before us, after it shall have arrived, will probably be found worthy of being noted as one of the accelerating impulses, and the date of it fixed in *red letter.* At the epoch, to which the present season of experimental science and practical wisdom is hastening, there will be a modern chronology, that will record the then late leading events, in every department of knowledge; and great will have been the number, and variety of them: The human mind is now "training itself in a vast arena." It is practising upon the theoretical knowledge, as well of the past, as of the present age.

In the new chronological table, there will be inserted an event now occurring, of a different description from the one just under consideration. What improvements, or what new order, or change, in the *political* affairs of the world at large, may, at some day, near or distant, possibly ensue from it, it would hardly be pertinent here so much as to surmise. Very interesting suggestions will however spontaneously arise from it, in the mind of every reflecting man. It is sufficient barely to mention, that the event alluded to, is the intended *Congress, at Panama*, planned and promoted by the Liberator, Bolivar, to which the republics of Colombia, of Mexico, and of Central America, or Guatemala, have appointed already plenipotentiaries; and the United States, it is well understood, will, in a certain shape participate in the proceedings. She has been invited, and the invitation is, by the president, accepted, and ministers will be deputed to represent her, and of course take part, more or less, in the deliberations, according as the nature and complexion of them shall decide on the propriety of so participating;—it being very clear, that the United States has no disposition to involve herself in alliances, or become otherwise than neutral towards all belligerent nations, who shall not interfere in the concerns of our hemisphere. This is a fixed principle, that will not be allowed to vary, in the policy of the United States.

Since the above was written, long protracted discussions in our congress, have at length, settled a constitutional doubt or two that had arisen, as well as every objection started in the case of this interesting question; and measures are adopted for effectually executing the mission; according to what is anticipated in the text above.

The Panama congress, it is now understood, will not assemble before October next, 1826: or at least, not be fully attended before that time.

NOTE 3.

The appropriations made by congress, at their last session, for objects of internal improvement, in canals and roads, amount to 541,567 dollars, which includes the sum of 30,000 dollars, to make surveys for a road, through Arkansas, to the frontier of Mexico.

NOTE 4.

On the 26th of February, 1825, a bill was reported to the house of representatives of the United States, by the chairman of the committee on roads and canals, containing "General Views," to be acted upon at the following session of congress; viz.

Section 1. Proposes to authorize the president of the United States to borrow any sum of money, not exceeding 10,000,000 dollars, for purposes as in section 2.

Section 2. Proposes to authorize the secretary of the treasury to make subscriptions on the part of the United States, in such companies for internal improvements as may be incorporated by the respective states, and as congress may approve from time to time.

Section 3. Contains a provision, that each state may, under certain restrictions, purchase the stock subscribed in such state, and take a transfer of the same from the secretary of the treasury.

Section 4. Directs the secretary of the treasury, so long as the United States remain share-holders, to receive dividends, and to vote for officers.

The particulars thus reported, have not, as yet, 1826, been acted on; perhaps cannot, according to the strict letter, be carried into effect; but they remain as so much useful memoranda upon the subject.

NOTE 5.

ON COMMERCE, NAVIGATION, THE PUBLIC REVENUE, THE PUBLIC DEBT, AND OUR NAVAL ESTABLISHMENT.

"In England, 50 years ago, the whole value of our exported produce, both native and foreign, was just fifteen millions of money. 'Now, the value of exported British produce alone, is upwards of fifty millions of money." *Edin. Obs.*

The United States export, for the 12 months ending on the 30th of September, 1825, has been, in value, as follows:—It is true, this has been a year of great speculation in trade:

Domestic commodities,	-	$ 66,944,745	
Foreign do. reshipped,		32,590,643	
Total,—			$ 99,535,388
15,000,000 pounds sterling are equal to	-		66,666,666

So that it appears the export of the United States, in domestic articles alone, for the year lately expired, has exceeded in value, the whole export of Great Britain 50 years ago; and further it appears, that the domestic articles of the United States so exported, exceed in value, two-sevenths of the exports of Great Britain in domestic articles, during the last year; and that the United States foreign exports during the same, amounts to one-seventh more, making three-sevenths.

The United States export for the last twelve months, of 99,535,388 dollars, as above stated, shows an excess in amount over that of the year preceding, of 24,600,000 dollars, and an excess over the average amount of the three preceding years of 1822, 1823, 1824, of 25,600,000 dollars;

The exports of those years having been as follows:—

1822.	Domestic, - - -	$ 49,874,079	
	Foreign reshipped, -	22,286,202	
			$ 72,160,281
1823.	Domestic, - - -	$ 47,155,408	
	Foreign reshipped, -	27,543,622	
			74,699,030

1824.	Domestic,	$ 49,684,709	
	Foreign reshipped,	25,248,779	
			74,933,488

For these three years the average proportion of the domestic exports, to the foreign, was as two to one nearly: for the year last past, it has been somewhat more in favour of domestic. Furthermore it appears, that out of the whole export of 99½ millions for the past year, 88¾ millions have been exported in United States bottoms; which shows the preponderating state of our navigation, over foreign, in a competition of equal tonnage duties and charges in our own ports; an equality that now prevails, according to treaties with foreign nations, without material exceptions, as a rule.

The navigation of the United States, by which this trade is carried on, may be reviewed as follows:

From 1792, the year immediately preceding the revolutionary war of France, down to near the end of 1807, the United States commercial marine rose from 564,457 tons, to 1,268,548; an increase of 704,091 tons: that is to say;

In the year 1792, vessels engaged in foreign voyages,	411,438
Coasting trade and fisheries,	153,019
Tons,	564,457

In the year 1807, vessels in foreign voyages,	848,306
Coasting trade and fisheries,	420,242
Tons,	1,268,548

At this epoch, there commenced a series of restrictions, such as embargo, &c., and war ensued, till 1815. In which opening year of peace, the United States commerce was eagerly resumed, and the tonnage engaged in its navigation surpassed even that of former prosperous times: it stood thus:—

Vessels in 1815, engaged in foreign voyages,	854,294
Ditto, in coasting trade and fisheries,	513,833
Tons,	1,368,127

But this sudden spring from fetters into activity, very naturally carried things, for the moment, beyond their maintainable bounds. In a little while from that period, navigation received a shock, as might have been expected, and during three or four years, a decrease was experienced. In 1821, however, commerce with us was no longer languishing; it had taken a decided start again; and the tonnage was as follows:

Vessels engaged in foreign voyages, - - -	593,825
Ditto, in coasting trade and fisheries, - -	705,132
Tons,	1,298,957

At the close of 1824, it stood thus:—

Vessels engaged in foreign voyages, - - -	636,806
Ditto, in coasting trade and fisheries, whereof 33,345 tons in the whale fishery, - - - -	752,357
Tons,	1,389,163

As to the year immediately last past, or close of 1825, no report on the subject is yet made; there being need of time yet for the treasury office to receive due returns from abroad, to cancel registers and make up the account. But it was lately stated, in the British house of commons, that the United States commercial tonnage actually amounts to 1,600,000 tons and upwards: which, considering the degree of industry we have seen going forward in all our principal ship-yards, during the year 1825, and the many fresh registers and enrolments at the custom houses, that took place in consequence, does not at all appear an exaggerated statement. It will very probably be found not to differ widely from the true extent of tonnage, in trade at the present time.

So that, upon the whole, it is evident the commercial marine of the country, in the aggregate, has increased, in 33 years from 1792, about 1,000,000 tons or more; and since the first year of peace, (1815) notwithstanding a temporary check and retrogradation that afterwards took place, has increased upwards of 200,000 tons. Since the year 1792, the fisheries and coasting trade of the country have increased in tonnage five fold and more.

It has been officially stated, that within the same period of

33 years, the commercial marine of Great Britain has experienced an increase of 997,000 tons; namely, from 1,545,000, up to 2,542,000 tons;—its standard, by a late report made on the subject.

CUSTOMS;

From whence, with about 7 per cent. in addition, from the sale of public lands annually, the revenue of the United States is derived.

This item, at the treasury department, stands thus:—

The net revenue which accrued from duties on imports and tonnage during the year 1822, was,	$20,500,775
The same, during the year 1823, - - -	17,008,570
The same, during the year 1824, - - -	20,385,430
The same, during the year last past, - -	
This is officially estimated at 24,000,000, but may, and probably will exceed this amount, by something considerable.—Say, - - - -	24,000,000

TREASURY.

Receipts and Outgoings.

The annual receipts into the treasury, during the year 1825, including the balance remaining from 1824, have amounted to about 29,000,000.

And this is a brief summary of the expenditure; viz.

For discharge of public debt, in interest, -	$ 4,000,000
For ditto, of ditto, this much of principal,	8,000,000
Devoted to the debt of gratitude towards the warriors of the revolution, - - - - -	1,500,000
For constructions of fortifications, the acquisition of ordnance, and other permanent preparatives of national defence, - - - - -	1,500,000
For the gradual increase of the navy, - -	500,000
For objects of internal improvement, authorized by special acts of congress, - - - -	1,000,000
Carried over, - - - -	16,500,000

Brought forward,	$16,500,000
For purchases of territory from the Indians, and payment of annuities to them,	500,000
For the whole expense of the administration of government, in its legislative, executive, and judiciary departments, including the support of the naval and military establishments, and all the contingencies of a government co-extensive with the Union,	7,000,000
Total,	$ 24,000,000

Leaving in the treasury on the 1st of January, 1826, a balance of 5,000,000 of dollars.

The public debt of the United States, down to the first of October, 1825, was as follows:

6	per cent. stock,	redeemable in	1826,	$16,270,797
6	do.	do.	1827,	13,096,543
6	do.	do.	1828,	9,490,099
4½	do.	do.	1829,	792,569
4½	do.	do.	1830,	792,569
5	do.	do.	1831,	18,902
5	do.	do.	1832,	18,902
4½	do.	do.	1832,	10,000,000
5	do.	do.	1832,	999,999
5	do.	do.	1833,	18,902
4½	do.	do.	1833,	2,227,364
4½	do.	do.	1834,	2,227,364
5	do.	do.	1835,	4,735,296
3	do.	at the pleasure of government,		13,296,231
5	do.	issued in payment for Bank of the United States stock, 70,000 shares,		7,000,000

Total of funded debt, October 1st, 1825,	$80,985,537
But, therefrom is to be deducted, the item last inserted of 5 per cents; because the United States are holders of the bank-shares representing this value,	7,000,000
Real total of debt, October 1st, 1825,	$73,985,537

On the same topick, a member of congress addresses his constituents, in the following words:—

The national debt, which, during the late war, grew to a very considerable amount, has been greatly reduced. I have no doubt, that that part of it that was contracted during the war, which remains unpaid, will be discharged in the course of ten years; and should the country continue to enjoy peace with all the nations of the earth, the whole of it may, and I hope will, be paid within the period aforesaid.

That you may more readily understand the amount and character of the funded debt, the following view of it is submitted:

DEBT.

The total amount of funded debt on the 1st of October, 1825, was, - - - -	$80,985,537 72
Of this amount, the only portion remaining unpaid of the revolutionary debt, is the three per cents, amounting to 13,296,231 dollars. This, and the subscription of 7,000,000 of dollars in the Bank of the United States, at five per cent., (the United States holding an equal amount of the capital of that institution,) are redeemable at the pleasure of the government, making, together, - - - - -	20,296,231 45
The residue of the public debt, contracted subsequently to January, 1812, and amounting to 60,689,306 dollars, exists in the following portions, and is redeemable at the following periods:	
In 1826, the residue of the unpaid loans of 1813, - - - - - - -	16,270,797 24
In 1827, the residue of the unpaid loans of 1814, - - - - - - -	13,096,542 90
In 1828, the residue of the unpaid loans of 1815, - - - - - - -	9,490,099 10
Carried forward,	$38,857,439 24

Brought forward,	$38,857,439	24
In 1829, the moiety of stock exchanged under the Act of 3d March, 1825,	792,569	44
In 1830, the other moiety of the same stock,	792,569	44
In 1831, the third of the stock issued in exchange for the stocks of 1813, 1814, and 1815, subscribed under the Act of 20th April, 1822,	18,901	59
In 1832, another third of same stock,	18,901	59
In 1832, the loan from the Bank of the United States, contracted under the Act of 26th May, 1824,	10,000,000	00
In 1832, stock created under Act of 15th May, 1820,	999,999	13
In 1833, the remaining third of the stock created under the Act of 20th April, 1822,	18,901	59
In 1833, the moiety of the stock exchanged under the Act of 26th May, 1823,	2,227,363	97
In 1834, the other moiety of the same stock,	2,227,363	98
In 1835, the stock issued under the Act of 3d March, 1821,	4,735,296	30
Total, reimbursable at the periods above stated,	$60,689,306	27
Total, redeemable at the pleasure of the government,	20,296,231	45
Total funded debt on the 1st October, 1825, as above,	$80,985,537	72

During the year 1825, near 8,000,000 dollars of the principal of the public debt was discharged; and after paying all the expenses of the civil list, the military and naval expenditures, there was left an unexpended balance in the treasury, on the 1st of January, 1826, of upwards of 5,000,000 dollars.

NAVY OF THE UNITED STATES.

JANUARY 1st, 1826.

West India station.

1 frigate, second class,
1 corvette,
1 sloop of war,
5 other vessels,
—— 8 in number.

Mediterranean station.

1 ship of the line,
2 frigates, first class,
1 corvette,
2 sloops of war,
—— 6 do.

Pacific station.

1 frigate, first class,
1 sloop of war,
1 other vessel,
—— 3 do.

Coast of Labrador.

1 vessel,
—— 1 do.

Coast of Africa.

1 vessel,
—— 1 do.

In ordinary.

6 ships of the line,
3 frigates, first class,
3 frigates, second class,
2 other vessels,
—— 14 do.

Carried forward, ——33 in number.

Brought forward, 33 in number.

Building.

5 ships of the line,
4 frigates,
3 sloops of war,
12 do.

Total, 45 in number.

Recapitulation.

Ships of the line,	12
Frigates, - -	14
Corvettes, - -	2
Sloops of war, -	7
Others, - -	10
Total,	45 in number.

It is proposed in the navy department, and will probably be adopted by congress, that the United States naval establishment shall consist of, viz.

1 vice admiral,
2 rear admirals,
30 captains,
30 masters commandant,
220 lieutenants,
10 chaplains,
50 surgeons,
65 assistant surgeons,
50 pursers,
20 sail makers,
450 midshipmen,
30 boatswains,
30 gunners,
30 carpenters,
20 sailing masters,
Petty officers,
Seamen,
Boys,
} of these, such number as the public exigencies may require.

NOTE 6.

A new Era in Diplomacy!

Reconcilement of the Indian nations, one towards another, and the establishment of peace between them.

No parallel attempt to it, ever before made; at least in this hemisphere. It has succeeded.

Congress, last session, 1825, voted the sum of 10,400 dollars for the expense of a mission for this object, including 2000 dollars as presents to the Indians. General Clarke, and governor Cass, were appointed the commissioners, and were deputed to negotiate with the chiefs and warriors of the various nations of Indians residing on the waters of the Mississippi; namely—the Scioux, the Sauk, the Fox, the Joway, the Chippeway, the Menominie, the Winnebago, the Pottawatomie, the Ottowa, the Illinois—Chippeway nations.

Accordingly, on the 30th day of June 1825, boats, with stores for the expedition, left St Louis; and on the 30th of July, the commissioners met at Prairie des Chiens; measures having in the meantime been taken to bring together, at that place, deputations from all the said Indian nations, for a *universal council*, as proposed by their great father, the president, there to be held.

On the 9th of August, there was a full and complete representation of *all;* and on the 17th, the discussions appear to have been brought to a close; and to have resulted in a good understanding and peace, where there had been at all times, until now, a state of enmity, and mostly of rancorous warfare; one tribe or nation against another, and some of them combined against other combinations: so that, by the 19th of August, 1825, a mutual treaty being drawn up, the articles of agreement were then fixed. The treaty was formally executed, and a copy thereof, on the day following, delivered to each one of all the parties.

It is a treaty of *peace*, *boundary lines for hunting*, and *good understanding* among the Indians, under the *mediation* and *guarantee* of the United States, and to be regarded as a "*Religious contract*,"—consequently lasting.

By an antecedent act of congress; viz. 20th of May, 1824;

there was an appropriation made, for defraying the expense of negotiating, as was then proposed, treaties of trade and friendship with the Indian nations beyond the Mississippi river; which also has completely succeeded; and large and valuable acquisitions of available territory are among the consequences to the United States.

Another important act of the last session of congress; viz. 3d March, 1825, authorized treaties with the Indians, for their consent to the making of a main or national road, from the frontier of Missouri to that of New Mexico.

NOTE 7.

A grand national road, from Washington city to New Orleans, has been scientifically surveyed; and is reported upon, by the board of internal improvement, through the secretary of war, to congress: April 1826. It exhibits a choice of three routes; viz.

Eastern Route.

Distance, from Washington to New Orleans, or summary of reconnoissance, 1169 miles.

Length of bridges; six miles, 626 yards.

Length of causeway; 35 miles, 586 yards.

Graduation; 735½ miles of two degrees, 292¾ miles of three degrees, 140¾ miles of four degrees with the horizon.

Quality of soils traversed. General growth of timber; rich in the bottoms of the valleys, sandy in the intermediate parts; the predominating growth, pine.

Population; whites, 202,430. Colour, 210,284.
Total, 412,714.

Middle Route.

Distance, or summary of reconnoissance, 1204 miles.

Length of bridges; five miles, 1473 yards.

Length of causeway; 39 miles, 356 yards.

Graduation; 714 miles of two degrees, 324 miles of three degrees, 166 miles of four degrees.

Quality of soils traversed. Growth of timber; from Washington to the Chatahoochee river, rich in the valleys, clayey in the intermediate parts. Growth, oak.

From the Chatahoochee to New Orleans, rich in the valleys, sandy in the intermediate parts. Growth, principally pine.

Population; whites, 262,335. Colour, 164,632.
Total, 426,967.

Western Route.

Distance, or summary of reconnoissance, 1147½ miles.

Length of bridges; three miles, 953 yards.

Length of causeway; 24 miles, 1211 yards.

Graduation; 662 miles of two degrees, 339 miles of three degrees, 146½ miles of four degrees.

Quality of soils traversed. General growth of timber; from Washington to the Cahawba, rich in the valleys, clayey and good quality in the intermediate parts. Oak and hickory predominate from Cahawba to New Orleans; the valleys and prairies productive, parts intermediate unproductive. Pine and oak the general growth.

Population; whites, 204,295. Colour, 107,899.
Total, 312,194.

NOTE 8.

A comparison of the several main *canal routes that have been under consideration, for uniting the Atlantic with the great lakes* north, *and with the river Ohio* west. *Subject to alterations from the surveys that are actually going forward.*

No. 1.	New-York city to Lake Erie, - -	*Miles*, 508
No. 2.	Havre de Grace to Lake Erie, - - -	515
No. 3.	Philadelphia to the Ohio, and Lake Erie, -	533
No. 4.	Philadelphia to the Ohio, and Lake Erie, *via* the Union canal, - - - - - -	576
No. 5.	Philadelphia to Lake Erie, by the Lehigh river,	459
No. 6.	Washington city to the Ohio and Lake Erie,	514

No. 1.

Grand canal, from Albany to Buffalo, lockage 688 feet; distance, *Miles*,	363	
The Hudson, from Albany to New-York,	145	
		508

No. 2.

The Susquehanna main north route, through Harrisburg, Sunbury, Wilkesbarre, Tioga point, and Seneca or Cayuga Lake, to Lake Erie; viz.

From the mouth of Susquehanna, to the New-York boundary line, either by the river channel and lateral canals at particular rapids; or else, by one great unbroken canal, in case that should be thought the best. Lockage, about 800 feet. Distance,	275	
The remainder of the route, from the New-York line to Lake Erie: this is chiefly accomplished, and will, ere long, be completed by the state of New-York. Distance,	240	
		515

No. 3.

From the Schuylkill river, through the Pennsylvania counties of Chester and Lancaster, to Middletown, on the Swatara. Distance,	83	
From Middletown, to the mouth of Juniata river,	25	
Thence to the Frankstown fork of the Juniata,	126	
Railroad thence to the south fork of Conemaugh river,	28	
Thence down to Pittsburg,	113	
From Pittsburg, through the counties of Allegheny and Armstrong, to French creek, near Meadville, and to the town of Erie, on Lake Erie,	158	
		533

No. 4.

Up the river Schuylkill improvements to Reading, and thence, by the Union canal, to Middletown at the mouth of the Swatara,	126	
Middletown to Pittsburg, and Lake Erie, as above particularized,	450	
		576

No. 5.

The river Delaware, to Trenton, - - -	40	
Canal thence to Easton, and up the Lehigh improvements to Lausanne, and Green Mount run, and thence, by Solomon's creek, to Wilkesbarre, on the Susquehanna, and up to the New-York line, -	179	
Within the state of New-York, as above, -	240	
		459

Lockage, as far as the New-York line, about 2450 feet.

No. 6.

From tide water at Washington, by the meanders of the Potomac, to Cumberland, to Savage river, to Crabbtree creek, and across the dividing ridge, to Deep creek valley, and by Smithfield and Connelsville, to the Monongahela river, and to Pittsburg. Lockage, 4000 feet, - - - - -	360	
From Pittsburg, up the Big Beaver valley, through Warren, to Cleveland, on Lake Erie. Lockage, 661 feet, - - - - - - - -	154	
		514

Lockage, 4661 feet.

CONCLUSION.

It was intended to add some observations, collaterally with the subject of canals, upon that of RAILWAY CONVEYANCE, by horse power and steam power, and the topicks incidental thereto; but every attempt of the kind, in this place, is necessarily superseded by a recent publication, on the part of the "Pennsylvania Society for promoting Internal Improvement," of Mr. Strickland's most valuable reports upon the identical subjects, and many other subjects also, of the highest interest to the community at large; for, closely are they connected with the growing prosperity of the nation.

In this country, there are situations in abundance, of more or less extent, where, from local circumstances, canal-making would not be practicable; or if practicable, not convenient, by reason of great expense, and yet where an improved mercantile and economical conveyance is highly desirable. This, then, for the most part of such cases, is attainable by means of railways: and, to speak generally, there seems to be no cause of doubt, the two systems will, in time more or less near at hand, come both into use, and have their regular courses, and co-operate, upon the whole, one with the other.

Already, in different parts of the country, there have been planned many railroads, both independent of, and auxiliary to lines of canal; and the time of their execution will undoubtedly be the nearer, in some proportion, as success may be proved to attend certain inventions of improvement, in the construction of locomotive engines, and their carriages, announced as recently made and tested, or on the point of being tested.

They are to have the effect of vastly reducing the enormous weight and bulk of this machinery, as hitherto it has been constructed, and been used in England, notwithstanding the cumbrous load, and the waste of power in propelling *it*, along with the objects of transportation.

In the manufacture and forming of railways, it is more than probable, that, in many situations, a choice, peculiar to this country, in the chief material to be used, may be afforded, and with no small advantage in point of cheapness. And it is likewise probable, that, in many situations, the horse power may be applied to railroads, as an advantageous conveyance.

THE END.

MAPS

ILLUSTRATING

"THE INTERNAL NAVIGATION OF THE UNITED STATES."

THE works of improvement, made, making, and contemplated, are described by *coloured lines;* these lines showing the general water communication internally, that will thereby be effected, from port to port, river to river, and one border to another of the country.

1. General map of the United States.
2. The eastern states, comprising,
   Maine, Massachusetts, New-Hampshire, Vermont, Rhode Island, Connecticut.
3. Map of New-York, New-Jersey, Pennsylvania.
4. Map of Delaware, Maryland, Virginia.
5. Map of Ohio, Indiana, Michigan.
6. Map of North-Carolina, South-Carolina, Georgia
7. Map of Illinois, Missouri.
8. Map of Kentucky, Tennessee.
9. Map of Mississippi, Alabama, Louisiana.
10. Map of Florida.

The *red* coloured lines designate those improvements, by canal or other works, that are already finished, or in progress of execution; the *yellow* coloured lines those that are projected, whereof some will be immediately gone into, and some at periods probably not very remote.

Some of the great river courses are traced in yellow, indicating that, although the beds of these have, in many places, been already cleared of shoals and other obstructions, yet a like attention to the object is still kept up; and in degree, more or less, will always be requisite, in order to clear away fresh obstructions, the consequences of annual floods and inundations.

Appropriations for the purpose have been made by Congress, and will be of course, from time to time, repeated.

The lines in red, (denoting that they are either completed, or in progress,) are the following:

No.

15. The Winnepiseogee canal; connecting Lake Winnepiseogee with tide water of the Piscataqua, at Dover, New-Hampshire.

1. The Merrimack river.

3. The Connecticut river.

11. The Middlesex canal; connecting Boston harbour with the Merrimack.

13. The Blackstone canal; between Providence harbour and Worcester, Massachusetts.

4. The Farmington and Westfield canals; between New-Haven, Connecticut, and the Connecticut river above Northumberland.

18. The New-York grand canal; from Albany to Buffalo.

17. The New-York Champlain canal; connecting Lake Champlain with the grand, or Erie canal.

20. The Oswego canal; connecting Lake Ontario with the Erie canal.

21. The Seneca and Cayuga canal; connecting those lakes with the Erie canal.

22. The Delaware and Hudson canal; connecting the Hudson river with the Lackawaxen.

13. The Lackawaxen canal; in continuation of the latter, up to the Lackawaxen coal mines.

No.
39. The Morris canal; connecting the Passaick river with the Delaware, at Easton.
46. The Lehigh river; between the Delaware at Easton, and the Lehigh coal mines.
51. The Delaware and Chesapeake canal; connecting the Delaware with the bay of Chesapeake.
41. The Schuylkill river; between Philadelphia and the coal mines in Schuylkill county.
42. The Union Canal; connecting the Schuylkill river with the Susquehanna, at Middletown.
60. The Pennsylvania canal,—eastern section; between the mouth of Swatara, at Middletown, and the Susquehanna, at the mouth of Juniata.
60. The Pennsylvania canal,—western section; between Pine creek, west of the Alleghany river, and the Kiskimenetas.
56. Port Deposite canal, Maryland.
57. Conestoga canal; connecting Lancaster city with the Susquehanna.
66. The Muskingum and Sciota river canal; connecting the Ohio with Lake Erie.
66. The Miami canal; between Cincinnati and Dayton.
71. The Louisville canal; connecting the Ohio river above the falls, with the same below.
67. The Appomatox river; from City Point, James river, to Farmville, Prince Edward.
68. James river and Kanhaway; between Richmond city and the Ohio.
89. Dismal Swamp canal; connecting the Chesapeake with Albemarle sound, North-Carolina.
97. The Dan and Roanoke rivers; between Danville and Albemarle sound.
92. Cape Fear river, North-Carolina.
93. The Great Pedee river.
94. The Winyaw canal; connecting Winyaw bay with the Santee river.
95. The Santee canal; connecting Santee river with the port of Charleston.

No.
98. The Wateree and Catawba rivers.
95. The Saluda river; from Columbia to Abbeville county.
98. The Seneca river; through Pendleton to the Blue Ridge.
98. South Edisto river.
87. The Savannah, Ogatchee, and Alatamaha canals; connecting these rivers.

The others are all in yellow, *(denoting that they are not yet commenced.)*

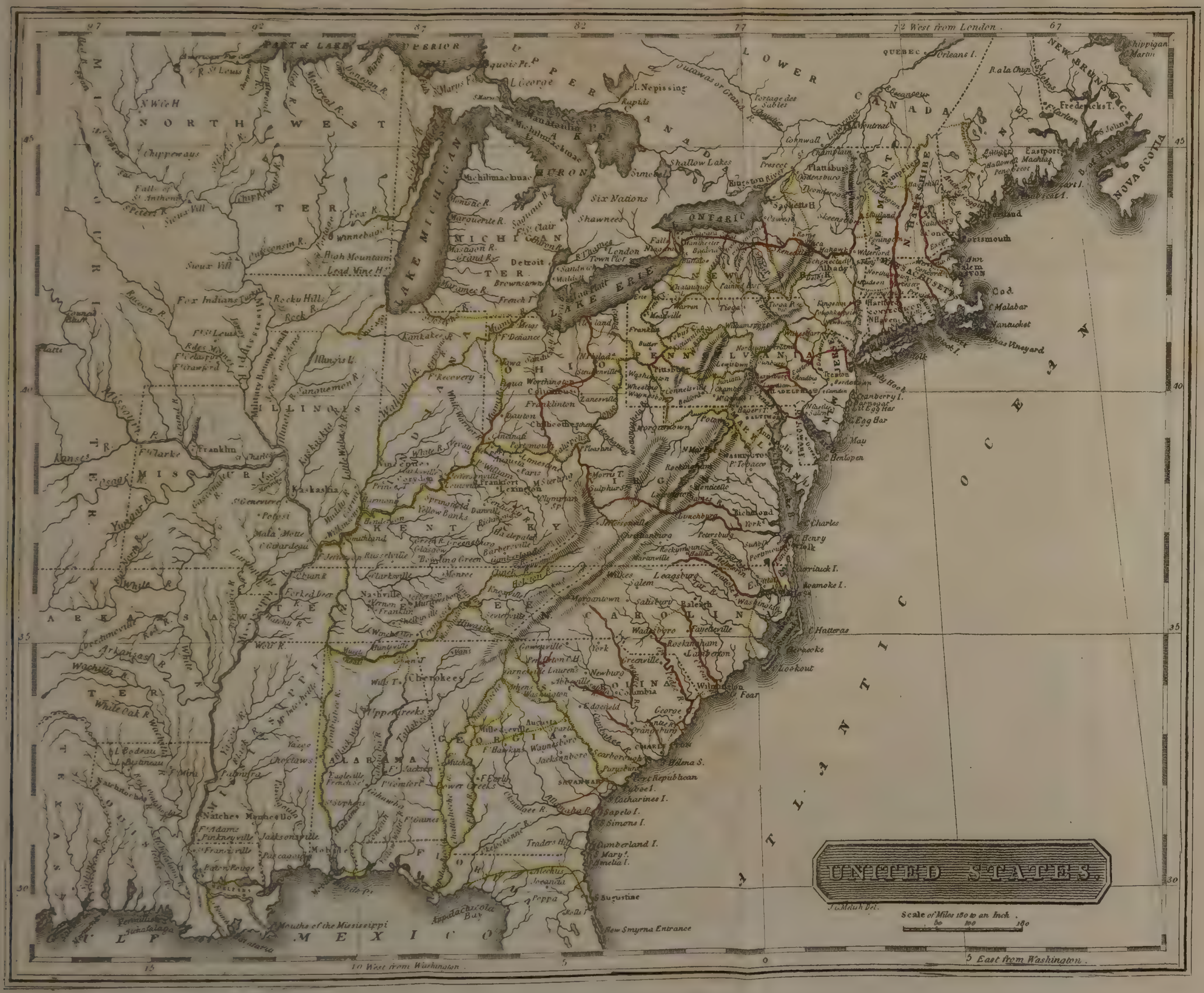
It is proper to notice, that, subsequently to the work being printed off, the author has been favoured with an official statement of the United States merchant tonnage, on the 31st of December last, 1825. The amount whereof is as follows:

Vessels engaged in foreign voyages, including the whale fishery, - - -	Tons, 700,788
Vessels in the coasting trade and fisheries, -	732,323
Total, - -	Tons, 1,433,111

Which does not quite come up to the estimate at page 175, but exceeds the tonnage of the preceding year, by 43,948 tons.

ERRATUM.

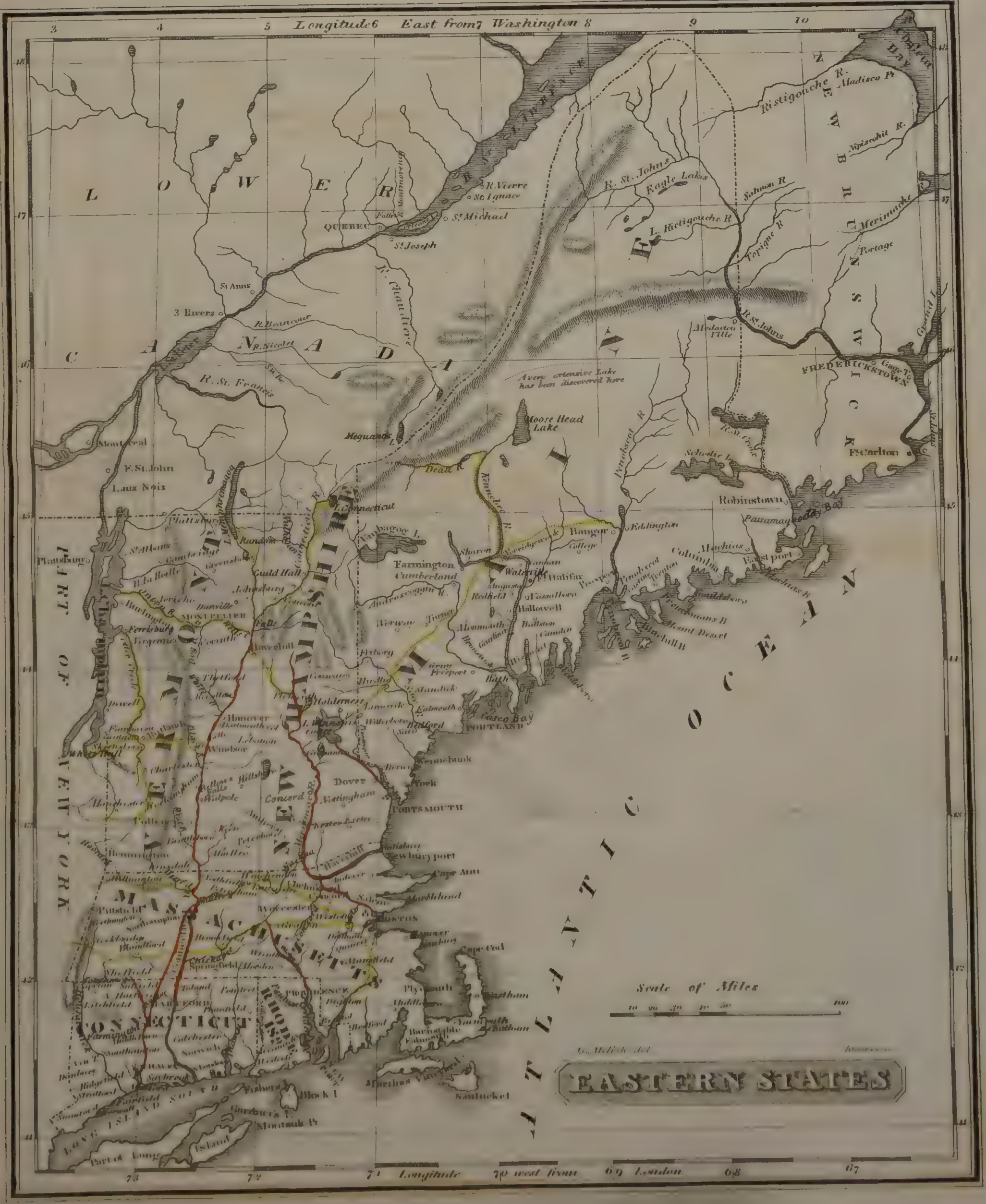
Page 87, *dele* last three lines; being a repetition.

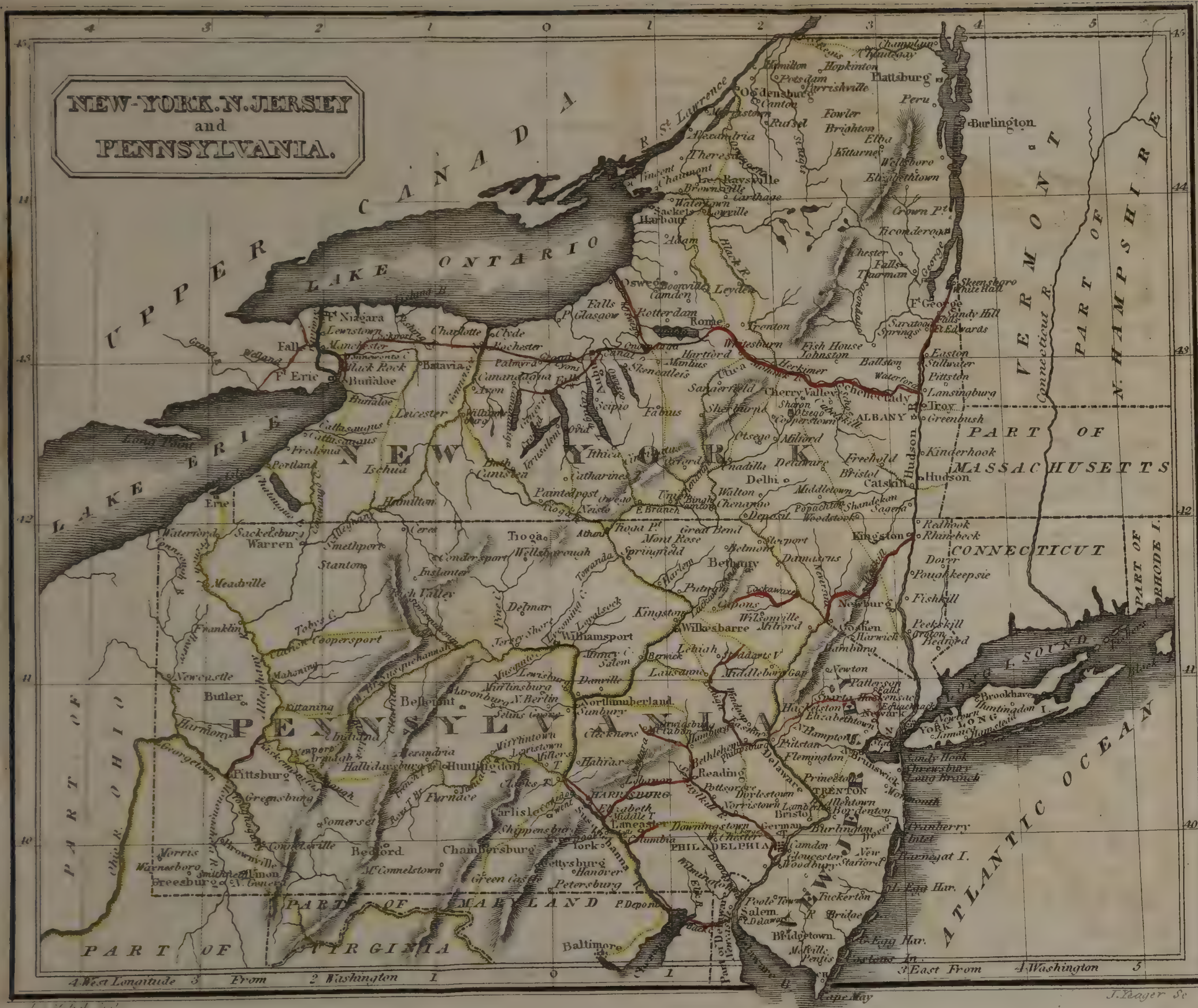


UNITED STATES.

J. Melish Del.

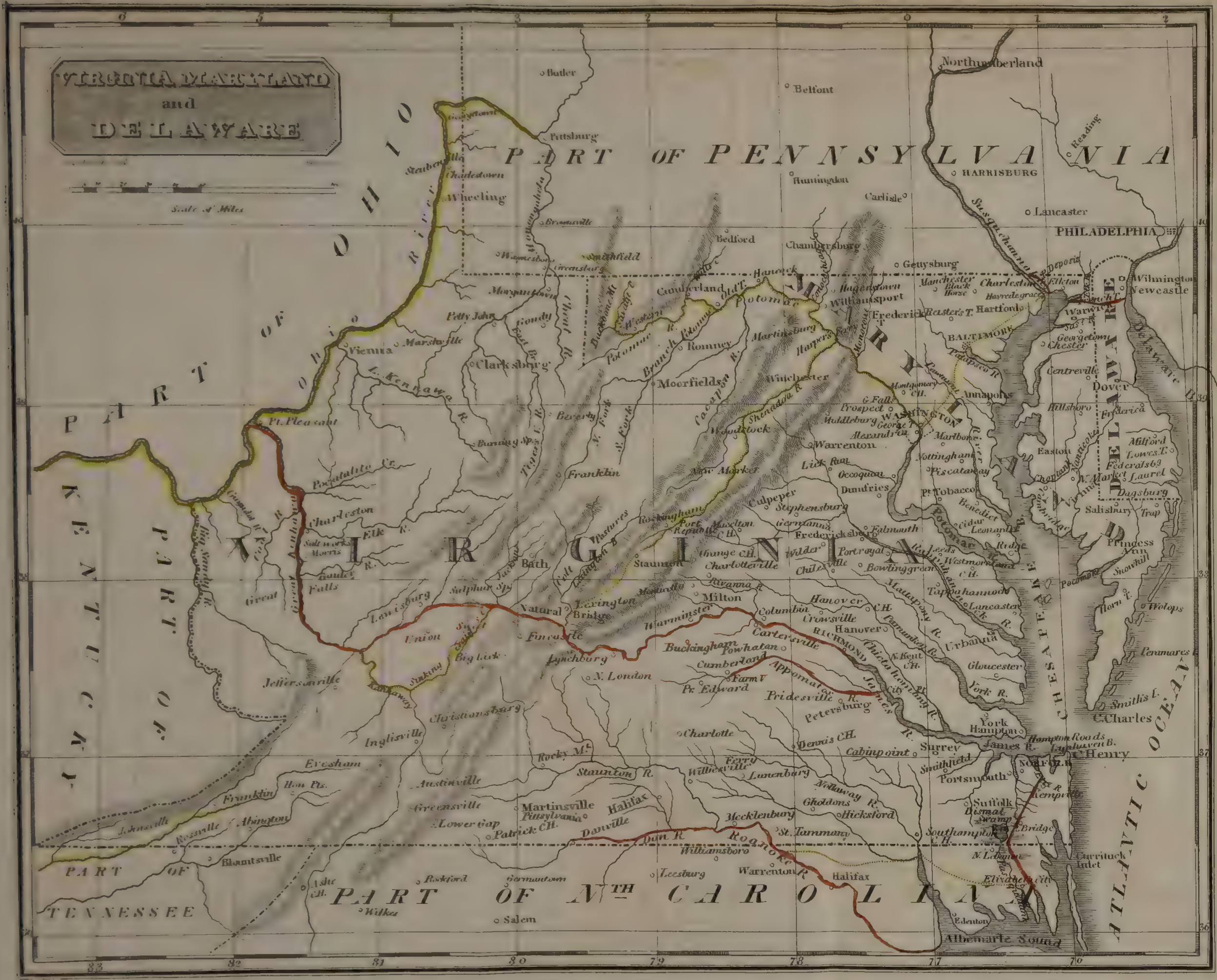
Scale of Miles 180 to an Inch.
60 120 180

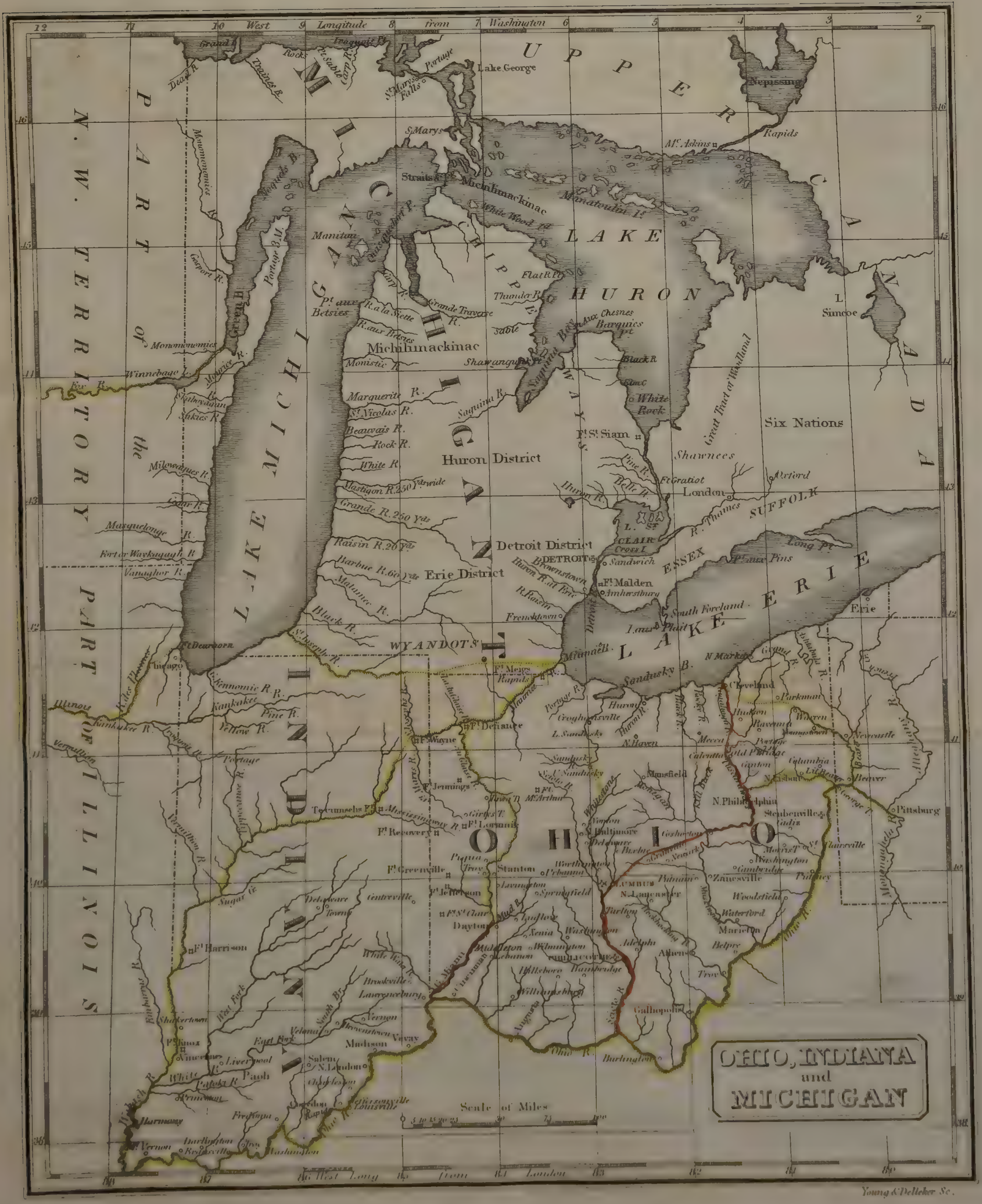

EASTERN STATES
Longitude 6 East from 7 Washington 8
71 Longitude 70 west from 69 London 68
LOWER CANADA
NEW BRUNSWICK
MAINE
NEW HAMPSHIRE
VERMONT
MASSACHUSETTS
CONNECTICUT
RHODE ISL
PART OF NEW YORK
ATLANTIC OCEAN
R. St. Lawrence
QUEBEC
St. Michael
St. Joseph
R. Chaudiere
St Anns
3 Rivers
Montreal
F. St. John
Laux Noix
R. St. Francis
R. Nicolet
R. Beancour
Chaleur Bay
Ristigouche R.
R. St. Johns
Eagle Lakes
L. Ristigouche R.
Salmon R.
Merimache R.
Portage
FREDERICKSTOWN
Gage T.
F. Carlton
Robinstown
Passamaquoddy Bay
A very extensive Lake has been discovered here
Moose Head Lake
Meguantic L.
Dead R.
Penobscot R.
Kennebec R.
Bangor
Eddington
Farmington
Cumberland
Waterville
Hallowell
Augusta
Machias
East port
Columbia
Mount Desert
Casco Bay
PORTLAND
Kennebunk
York
PORTSMOUTH
Dover
Concord
Newbury port
Cape Ann
Salem
Marblehead
BOSTON
Plymouth
Cape Cod
Chatham
Barnstable
Nantucket
Marthas Vineyard
Block I.
Gardiners I.
Montauk Pt.
Long Island
Part of Long Island
LONG ISLAND SOUND
L. Champlain
Plattsburg
St. Albans
Burlington
MONTPELIER
Danville
Guild Hall
Hanover
Windsor
Bennington
Pittsfield
Northampton
Worcester
Springfield
HARTFORD
NEW HAVEN
Fairfield
Norwich
PROVIDENCE
Newport
Bedford
L. Connecticut
Umbagog L.
Connecticut R.
Merrimack R.
Scale of Miles
10 20 30 40 50 100
S. Melish del.



NEW-YORK. N. JERSEY
and
PENNSYLVANIA.
UPPER CANADA
LAKE ONTARIO
LAKE ERIE
Long Point
R. St. Lawrence
NEW YORK
PENNSYLVANIA
N. JERSEY
VERMONT
PART OF N. HAMPSHIRE
PART OF MASSACHUSETTS
CONNECTICUT
PART OF RHODE I.
PART OF OHIO
PART OF MARYLAND
PART OF VIRGINIA
ATLANTIC OCEAN
LONG I. SOUND
LONG I.
Connecticut R.
Hudson
Delaware
Ft. Niagara
Lewistown
Manchester
Black Rock
Buffaloe
Ft. Erie
Batavia
Rochester
Charlotte
Canandaigua
Geneva
Oswego
Rome
Utica
Herkimer
Schenectady
ALBANY
Troy
Lansingburg
Greenbush
Kinderhook
Hudson
Catskill
Kingston
Rhinebeck
Poughkeepsie
Fishkill
Newburg
Goshen
Peekskill
Bedford
NEW YORK
Brookhaven
Huntingdon
Jamaica
Hempstead
Sandy Hook
Long Branch
Newark
Elizabethtown
Brunswick
Princeton
TRENTON
Bordenton
Burlington
Camden
Woodbury
Salem
Bridgetown
Cape May
Cranberry Inlet
Barnegat I.
Little Egg Har.
Gt. Egg Har.
Tuckerton
PHILADELPHIA
Germantown
Norristown
Reading
Bethlehem
Easton
Lancaster
York
Columbia
HARRISBURG
Carlisle
Shippensburg
Chambersburg
Gettysburg
Hanover
Bedford
Somerset
Greensburg
Pittsburg
Washington
Brownsville
Butler
Kittaning
Franklin
Meadville
Waterford
Erie
Warren
Smethport
Coudersport
Wellsborough
Williamsport
Northumberland
Sunbury
Danville
Berwick
Wilkesbarre
Kingston
Bellefont
Huntingdon
Lewistown
Mifflintown
Newcastle
Ogdensburg
Plattsburg
Burlington
Sackets Harbour
Watertown
Ithica
Owego
Binghamton
Oxford
Norwich
Delhi
Cooperstown
Cherry Valley
Saratoga Springs
Ballston
Waterford
Ft. Edwards
Sandy Hill
Whitehall
Ticonderoga
Crown Pt.
Peru
4 West Longitude 3 From 2 Washington 1 0 1 3 East From 4 Washington 5

J. Yeager Sc


VIRGINIA MARYLAND and DELAWARE
Scale of Miles
PART OF PENNSYLVANIA
PART OF OHIO
PART OF KENTUCKY
PART OF TENNESSEE
PART OF Nth CAROLINA
VIRGINIA
MARYLAND
DELAWARE
CHESAPEAKE B.
ATLANTIC OCEAN
Ohio River
Potomac R.
James R.
Roanoke R.
Susquehanna R.
Delaware R.
Albemarle Sound
PHILADELPHIA
HARRISBURG
Lancaster
Pittsburg
Wheeling
Northumberland
Carlisle
Chambersburg
Gettysburg
Bedford
Huntingdon
Belfont
Butler
Reading
Wilmington
Newcastle
Dover
Hagerstown
Williamsport
Fredericktown
Cumberland
BALTIMORE
Annapolis
WASHINGTON
George T.
Alexandria
Easton
Centreville
Chester
Salisbury
Princess Ann
Snowhill
Milford
Lewes T.
Dagsburg
Laurel
Marlboro
Piscataway
Pt. Tobacco
Leonardtown
Winchester
Martinsburg
Harpers Ferry
Romney
Moorfields
Woodstock
New Market
Rockingham
Staunton
Charlottesville
Warrenton
Culpeper
Fredericksburg
Falmouth
Dumfries
Occoquan
Leesburg
Lexington
Natural Bridge
Fincastle
Lynchburg
Milton
Columbia
Warminster
Buckingham
Powhatan
Cartersville
RICHMOND
Hanover
Petersburg
Cumberland
Farmville
Pr. Edward
N. London
Charlotte
Lunenburg
Mecklenburg
Halifax
Danville
Pittsylvania
Martinsville
Patrick C.H.
Rocky Mt.
Christiansburg
Inglisville
Austinville
Greensville
Evesham
Abingdon
Franklin
Blountsville
Jeffersonville
Lewisburg
Union
Sulphur Sps.
Bath
Franklin
Beverly
Clarksburg
Morgantown
Marshville
Vienna
Pt. Pleasant
Charleston
Kenhawa R.
Big Sandy R.
Gauley Falls
Staunton R.
Dan R.
Appomattox R.
Surrey
Cabinpoint
Smithfield
Portsmouth
Norfolk
Suffolk
Dismal Swamp
Southampton
Hampton
York
Gloucester
Urbanna
Lancaster
Tappahannock
Bowlinggreen
Port Royal
Westmoreland C.H.
Hampton Roads
C. Henry
C. Charles
Smith's I.
Currituck Inlet
Elizabeth City
Edenton
Warrenton
Halifax
Williamsboro
Leesburg
Salem
Germantown
Rockford
Wilkes
Ashe C.H.



OHIO, INDIANA and MICHIGAN

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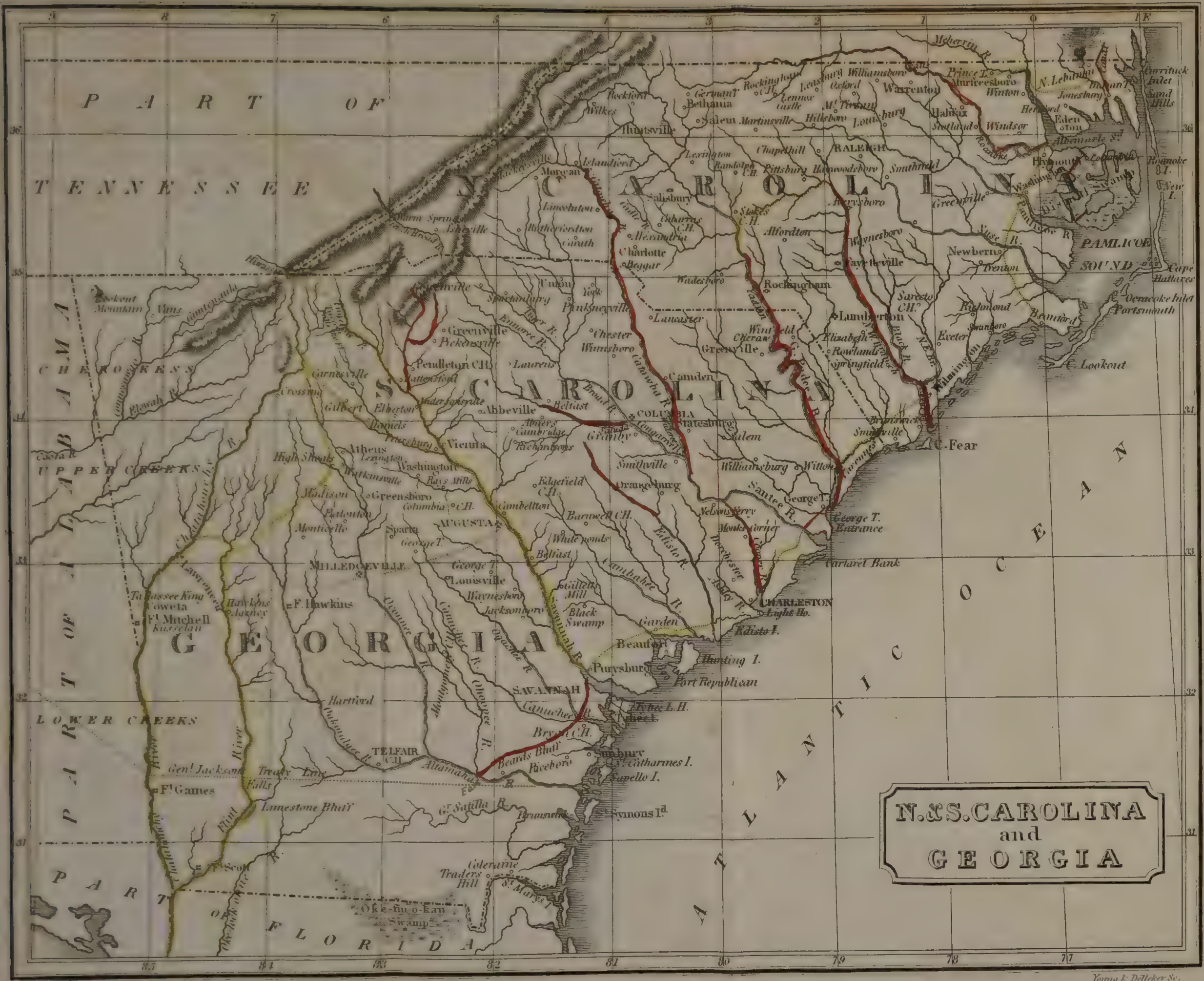

N.&S.CAROLINA
and
GEORGIA

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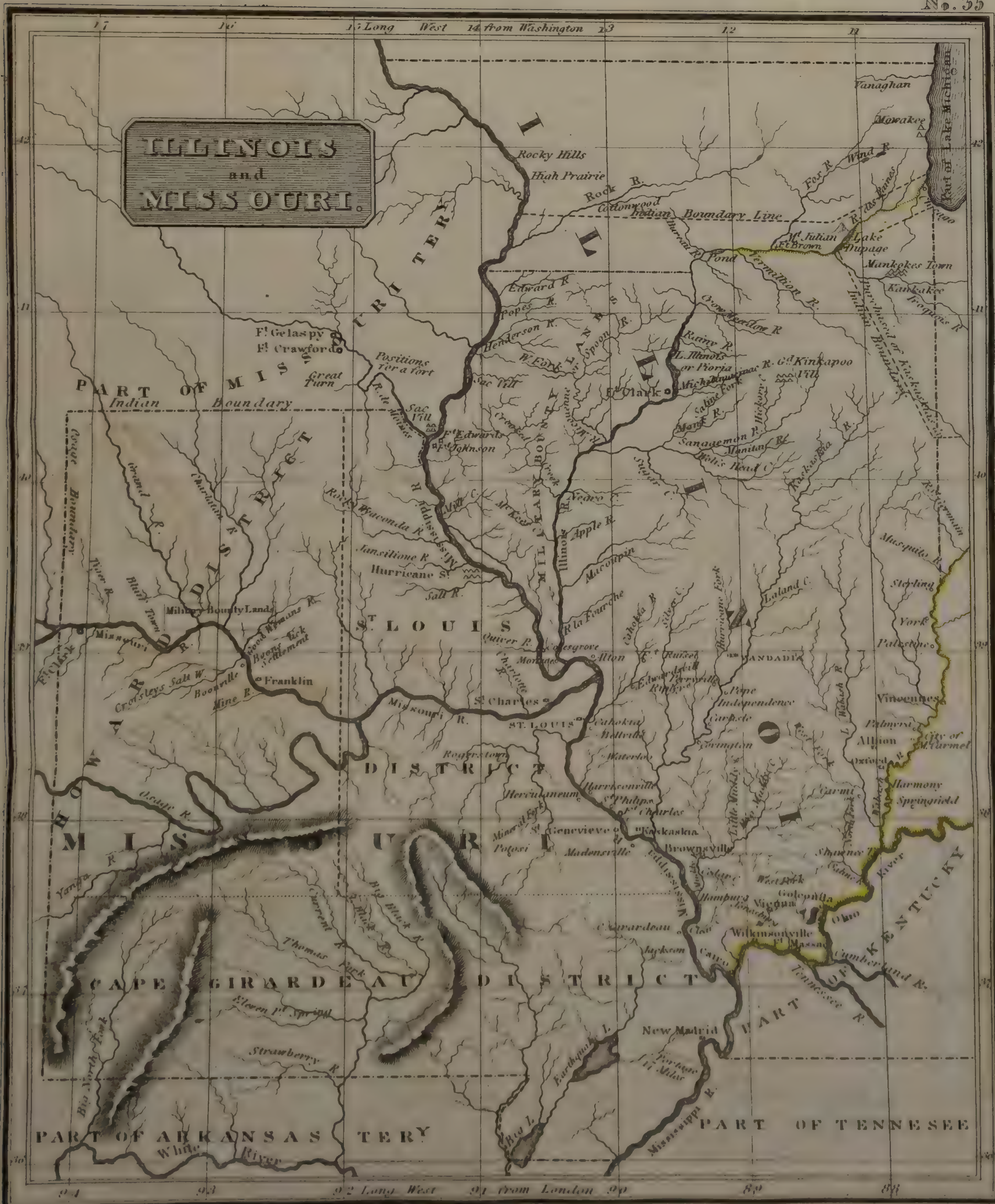
ILLINOIS
and
MISSOURI.
17
16
15 Long West 14 from Washington 13
12
11
PART OF MISSOURI TERY
ILLINOIS
Indian Boundary
Osage Boundary
HOWARD DISTRICT
ST. LOUIS DISTRICT
MISSOURI
CAPE GIRARDEAU DISTRICT
PART OF ARKANSAS TERY
PART OF TENNESEE
PART OF KENTUCKY
MILITARY BOUNTY LANDS
Part of Lake Michigan
Vanaghan
Mowakee
Wind R.
Fox R.
des Planes R.
Chicago
Rocky Hills
High Prairie
Rock R.
Cottonwood
Indian Boundary Line
Mt. Julian
Ft. Brown
Lake Dupage
Pond
Vermillion R.
Mankekes Town
Kankakee
Iroquois R.
Crow Meadow R.
Edward R.
Popes R.
Henderson R.
W. Fork
Spoon R.
Rainy R.
L. Illinois or Peoria
Michilimackinac R.
Gd. Kickapoo Vill.
Ft. Clark
Saline Fork
Mony R.
Hickory C.
Sangamon R.
Manitou R.
Bulls Head C.
Kaskaskia R.
Ft. Gelaspy
Ft. Crawford
Positions for a fort
Great Turn
R. de Moines
Sac Vill.
Sac Vill
Ft. Edwards
Ft. Johnson
Crooked C.
Grand R.
Chariton R.
Rocky R.
Waconda R.
Mill C.
McKees C.
Negro C.
Sugar C.
Apple R.
Illinois R.
Mississippi R.
Jansilione R.
Hurricane S.
Salt R.
Macoupin
Military Bounty Lands
Good Womans R.
Boons Lick Settlement
Franklin
Boonville
Crosleys Salt W.
Mine R.
Ft. Clark
Missouri R.
Blue R.
Tiger R.
Plum Fork
Cahokia R.
Silver C.
Hurricane Fork
Laland C.
VANDALIA
R. la Fourche
Quiver R.
Osegrove
Montalle
Alton
Charlotte R.
St. Charles
ST. LOUIS
Cahokia
Belltrille
Ft. Edwardsville
Ft. Russel
Ridge Prairie
Pope
Independence
Carlisle
Covington
Waterloo
Harrisonville
St. Philips
Ft. Charles
Rogerstown
Herculaneum
Mineral Fork
St. Genevieve
Potosi
Madensville
Kaskaskia
Brownsville
Little Muddy R.
Big Muddy R.
Osage R.
Yanka R.
Current R.
Big Black R.
Thomas Fork
Eleven Pt. Spring
Strawberry R.
Big North Fork
White River
C. Girardeau
Clair
Jackson
Cairo
Hamburg
West Fork
Golconda
Vienna
Jonesboro
Wilkinsonville
Ft. Massac
Ohio
Cumberland R.
Tennessee R.
New Madrid
Earthquake L.
Big L.
Mississippi R.
Portage 1½ Miles
Germain R.
Mascoutin R.
Sterling
York
Palestine
Vincennes
Palmyra
Albion
City of Mt. Carmel
Oxford
Harmony
Springfield
Carmi
Shawnee T.
Saline R.
Wabash R.
L. Wabash R.
Little Wabash
Big Muddy
Elk R.
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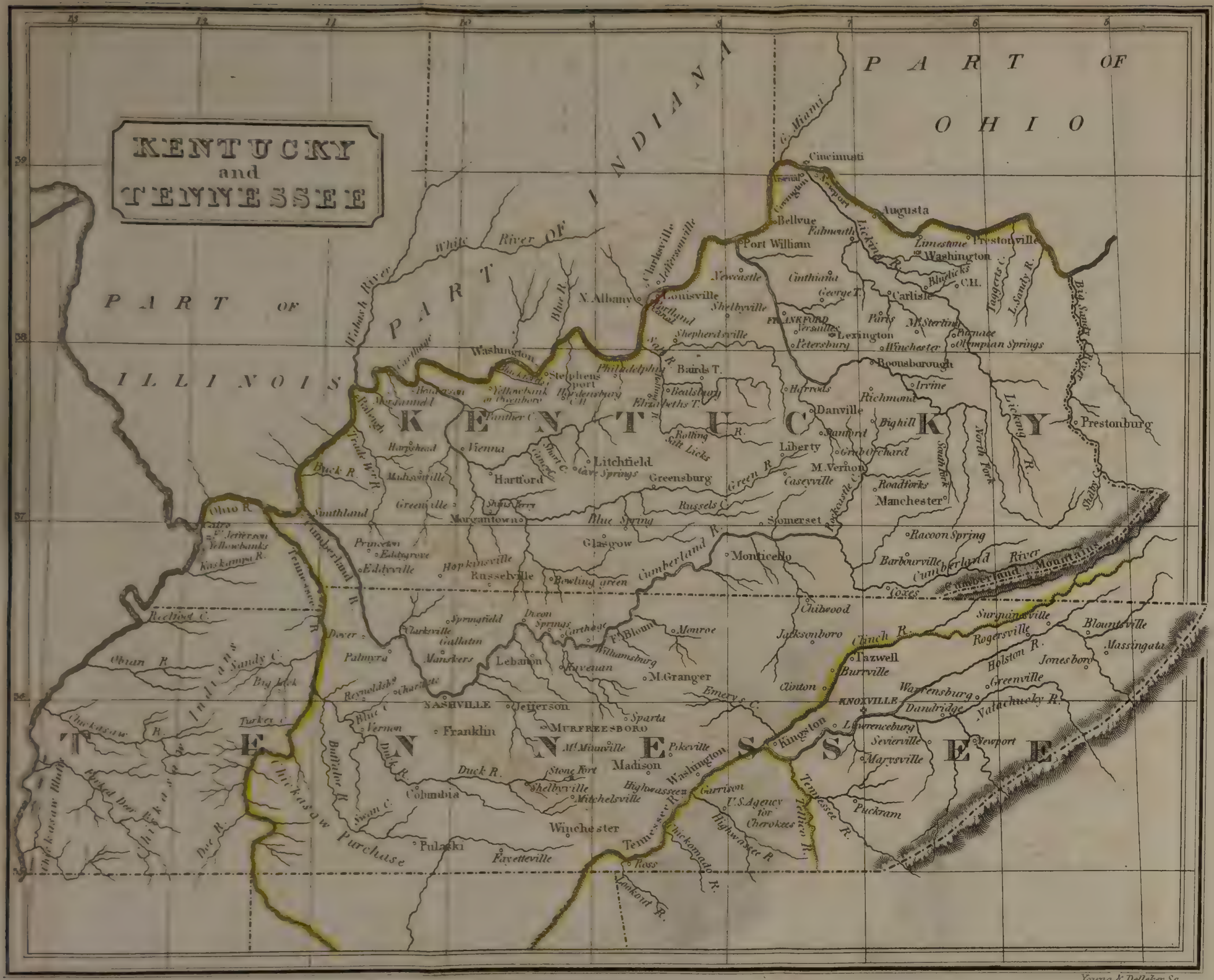

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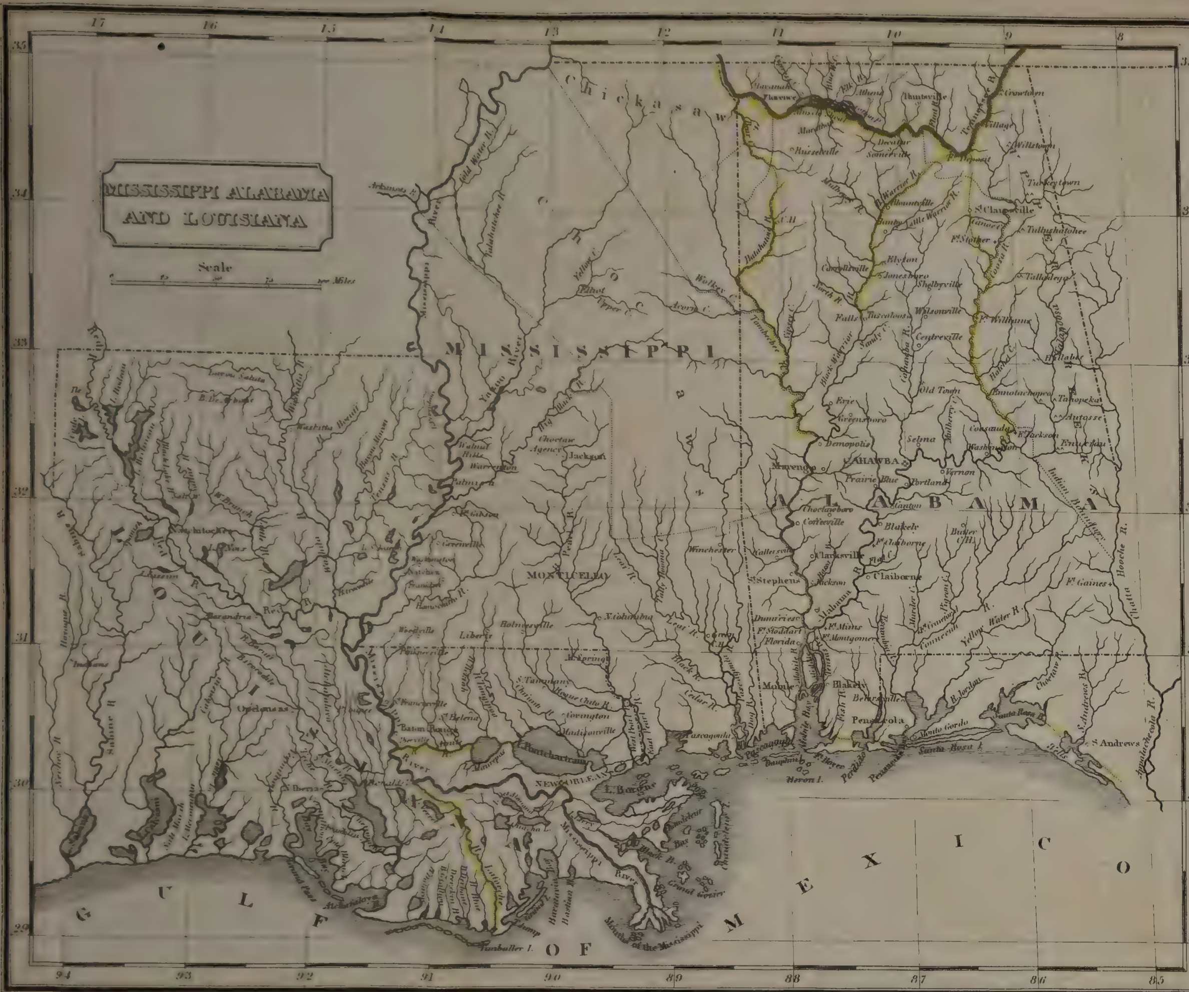

MISSISSIPPI ALABAMA AND LOUISIANA

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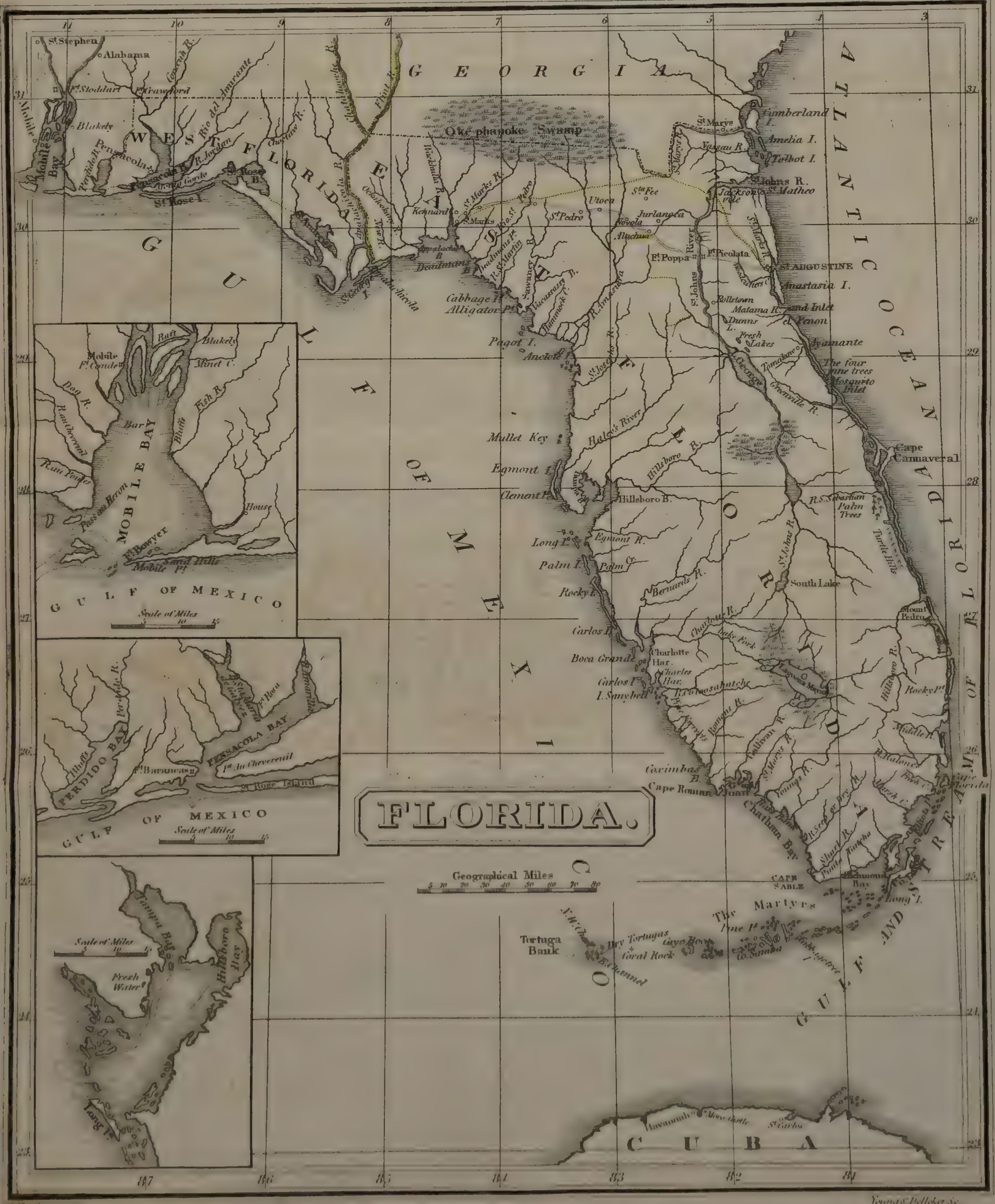

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